Rosenberger

HDCS® STRUCTURED CABLING SYSTEM

Company Overview

Rosenberger Asia Pacific Electronic Co., Ltd. is a wholly owned subsidiary invested and built in China by Rosenberger Hochfrequenztechnik GmbH & Co, Germany in 1997. With its long tradition of being the best and providing creative solutions, Rosenberger Asia Pacifi c has excelled and earned a great reputation in the Asia Pacific region. It has become the regional high tech development center, integral in Rosenberger's global strategy.

With modern management, innovative research and development, design, and an expansive service center network, Rosenberger Asia Pacific ranks steadily as a leader in the telecommunications and IT industry. The company's global technology platform is open and expansive. Our progress in innovation and technology serves as a strong basis for our sustained development and is reflected in the quality you see in our products and customer service.

In line with Rosenberger Headquarters' production management system, quality standards and professional manufacturing standards, Rosenberger Asia Pacific produces the highest quality products in its Beijing, Shanghai and Guangdong manufacturing bases.

The Rosenberger Beijing base has equipped R&D, manufacturing, testing, training, sales and services system, including worldwide advanced mechanical processing, plating, connector & cable assembly and testing production lines. Playing a leading role in Asia, it is able to maintain its technological superiority steadily in the micro-wave telecommunication cable assembly and coaxial connectors industry.
Our Rosenberger Shanghai bases have obtained a complete set of fiber optic manufacturing technology and testing standards from Germany. The factories have highly-automated fi ber optical cable, fi ber optic connector and cable assembly, HDCS® structured cabling and datacenter solution production lines, guaranteeing our technological superiority and quality products. As the center of fi ber optics manufacturing, sales and service for Asia Pacifi c region, Rosenberger team in Shanghai bases is ready and capable of providing much stronger support and better services to our customers.

Relying on the complete system and service network in China mainland and the logistics centers in Singapore and Pakistan, Rosenberger Asia Pacific has formed a high-quality, fast and flexible logistics support system that fully demonstrates our customer-focused service. Rosenberger Asia Pacifi c is an ISO-9001 quality system, ISO-14001 environmental system and ISO/TS-16949 automotive industry system certifi ed company. We exercise stringent quality control in our products and services. As we expand and improve our sales and service system, our distribution and agency framework becomes more solid. We are confident in our products and optimized solutions to serve our customers and exceed their expectations.

Rosenberger

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HDCS® Cabling Technology

Rosenberger HDCS® Fiber Technology

Rosenberger *HDCS*® supports all kinds of specific customer requirement by applying the tailored-design and products, patented-technology as well ad the highest quality-service for all structure cabling system.

PreCONNECT® Fiber Trunk

Fiber-optic links with pre-terminated cables can be used on Campus Backbones or Building Backbones to take advantage of the following benefits of a Plug & Play solution:

- No splicing point at both ends of cable assembly, low insertion loss.
- Cable ends are already terminated with standard compliant connectors, 100% tested.
- Patented cable furcation technology avoids additional insertion loss and guarantees reliable performance.
- Connectors are protected by compression-proof, tension-proof and water-proof installation tube with pulling handle, facilitating convenient and simple on-site installation.
- Each breakout cable is identified by numbering tag, which helps to match the adapters on patch panels.
- Various types of connectors available for customer's selection: SC, LC, MTRJ,ST, MPO

Splicing Module

Splicing Patch Panel

High Density Modular Fiber Patch Panel

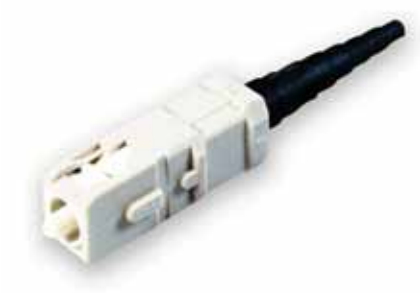
HDCS® High density modular fiber patch panel general support various fiber module applied to fiber cross connection in building gather point or equipment room with below advantages:

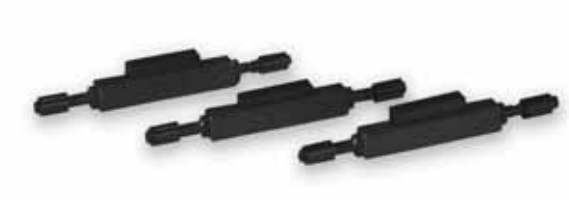
- 5HU size can be held 12 modules and capacity reach up to 288 fibers
- Splicing module or pre-connect module are option
- Both supporting pre-connect trunk fiber cables and conventional fiber cables
- With horizontal cable management and ID system
- 100% plant tested ensure good performance
- Easy for expansion and maintenance

Field-Terminated Fiber Connector

Field fiber termination technology using the *HDCS*® crimp connector system or mechanical splicing offers major advantages for FTTD cabling application:

- Terminating the fiber within 2 minutes, either on buffered fiber (diameter: 900µm) or on 3mm fiber cable
- No epoxy needed, eliminating epoxy curing process, and simplify the whole installation job
- Pre-polished in factory, eliminating on-site polishing job
- No fusion-splicing point, more reliable and safe.
- Such as SC, LC and ST field terminated connected are available
- Mechanical splicer support site quick fiber connections

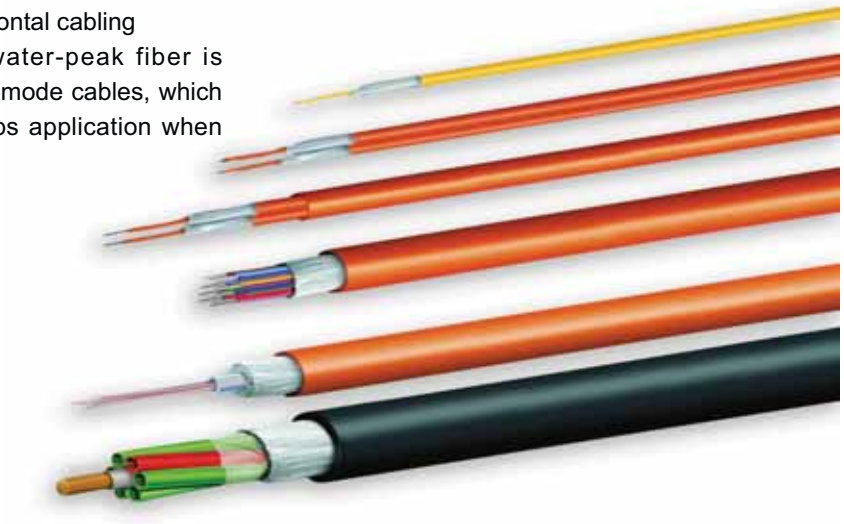




Fiber Optical Cable

Fiber optical cables cover the applications of campus backbone, Inside-building backbone and FTTD. Typical cables include 9/125µm singlemode, multimode 50/125µm or 62.5/125µm and laser optimized 10 Gigabit 50/125µm. *HDCS*® Cables have following advantages:

- Outdoor non-metallic or armored optical cables are available for outdoor campus application
- Indoor tight-buffer breakout cables and general-purpose cables
- Breakout cables up to 24 fibers are provided for building backbone and horizontal cabling
- G.652D compliant zero-water-peak fiber is used in for all *HDCS*® singlemode cables, which support upgrade to 100Gbps application when utilizing DWDM technology
- *HDCS*® provides UL-approved OFNR and OFNP graded indoor premise cabling optical cables. LSZH optical cables meet fire-retardant requirements of IEC60332-1, EC60332-2, IEC60332-3
- Special rodent-resistant optical cables are available to meet special outdoor working environment
- Bending insensitive fiber cable can working at small bending radius condition and keeping good transmission performance



HDCS® Cabling Technology

HDCS® Fiber-to-the-Desk (FTTD)

The *HDCS*® fiber-optic outlets are designed to meet various requirements in a Fiber-to-the-Desk (FTTD) environment, supporting 1000Mbps, 10Gbps transmission speed up to desktop and high safety requirement.

- Two optional mounting styles: 45-degree-angled flush-mount and on-the-duct surface-mount, product structure helps bending protection and cable management
- Optional fiber interfaces include SC, LC and ST. Especially, LC adapter module has hinged dust cover, more user-friendly
- Providing armored work-area patch cord, greatly improving tensile-strength and pressure-strength, hence forming more reliable connection
- ROHS-Compliant
- Flame-retardant: UL94 V-0

Rosenberger HDCS® Copper Technology

HDCS® Cooper LAN Cable

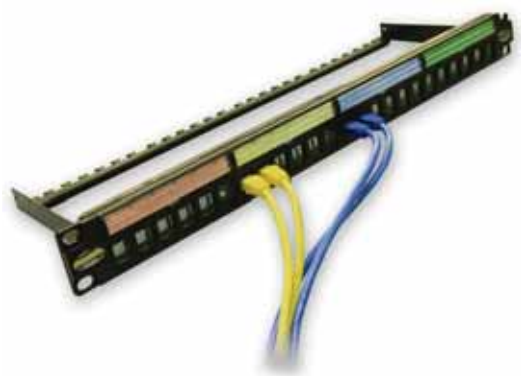
HDCS® Cooper LAN Cables include unshielded and shielded types, and are used for horizontal cabling. Performance levels include CAT.5e, CAT.6, CAT.6 and CAT.7. Supported applications cover 100Mbps, 1000Mbps and 10Gbps.

- Compatible with all current connecting hardware to EN 50173, TIA568C and ISO/IEC 11801
- Stable construction, electrically and mechanically high quality guarantee demanding applications
- exceed TIA568-C.2 and ISO/IEC11801 2nd requirements for correlative performance by significant margins
- Various cable structures available, including UTP, FTP, FFTP and SFTP
- *HDCS*® provides UL-approved CM, CMR and CMP graded copper LAN cables. LSZH cables meet fire-retardant requirements of IEC60332-1, IEC60332-2, IEC60332-3
- ROHS-Compliant

Dust-Proof Patch Panel

Dust-proof patch panel can be loaded all of *HDCS*® copper keystone jack applied in communication room or data center cabling, advantage of dust proof patch panel shown as below:

- Each port has a spring dust cover that good for dust protection
- Modular design is easy for installation and maintenance
- Attached four color set of label convenience for cabling management



- With longer back cable management for cable bending radius protection
- Nice arc shape

Pegasus Keystone Jack

Pegasus Keystone Jack utilizes tool-less termination method. Pegasus Keystone Jack has 3 categories: CAT.5e, CAT.6 and CAT.6a. The advantage as below:

- Product performance far exceeds TIA568C.2-1 hardware standards, especially for short link performance
- Tool-less termination based on innovative hinged pressing cover, supporting a laborsaving cable termination
- The jack pins can endure over 1000 times plug-unplug cycles
- Mated with RJ11 plugs, internal pins will not recess, supporting trouble-free switching between voice and data applications
- Locking mechanism keeps the pressing cover in place, and can be easily released when required. This jack supports over 200 times re-terminations
- Compatible with all of Rosenberger *HDCS*® modular patch panels and faceplates
- Patented is filed

HDCS® Outlet Faceplate and Surface Mount Box

User-friendly *HDCS*® outlets, faceplates and SMB (surface mount box) are designed to provide perfect interface for data interconnection.

- Angled faceplate, flat faceplate and surface mount box are selectable to meet different requirements
- All *HDCS*® existing RJ45 jacks can fit into faceplates and SMB
- All products have transparent labeling kit for easy identification of physical links
- Choice of outlet port quantity 1, 2, or 4 for faceplates, 1, 2, 4, 6 port optional for SMBs
- With shutter or not for surface mount box
- Keystone jacks suitable for surface mount box

1 Fiber Optic Cable

Rosenberger *HDCS*® provides the customer with fiber-optic cables for distribution cabling solution which are designed to exceed the standard requirements of IEC 11801, EN 50173 and ANSI/TIA-568-C. The performance of a cabling system is determined by the key parameters such as attenuation and bandwidth.

Attenuation is the reduction in intensity of the signal light with respect to distance traveled through the optical fiber. And it is measured in dB/km. Low attenuation values allow longer link distances without impairing system performance.

Bandwidth is the parameter which refers to the data transfer capacity. It generally drops with increase of cable length. A fiber-optic multimode cable is specified by the bandwidth-length in MHz. km. Due to different characteristic, the bandwidth of singlemode fibers can be calculated from the pulse dispersion given in ps/(km.nm) if the spectral width (nm) of the light source is known.

Specification

Properties	Unit	E9/125(LWP)	G50/125	G62.5/125	OM3	OM4
Core Diameter	[µm]	9.2±0.4	50±3.0	62.5±3.0	50±2.5	50±2.5
Cladding Diameter	[µm]	125±0.7	125±2.0	125±2.0	125±2.0	125±1.0
Diameter Primary Coating	[µm]	245±5	245±10	245±10	245±10	245±10
Numerical Aperture	-	0.2±0.015	0.2±0.015	0.275±0.015	0.2±0.015	0.2±0.015
Core-cladding Concentricity	[µm]	≤0.5	≤1.5	≤1.5	≤1.5	≤1.5
Attenuation	850 nm [dB/km]	-	≤3.0	≤3.0	≤2.5	≤2.5
	1300 nm [dB/km]	≤0.35	≤0.8	≤0.8	≤0.7	≤0.7
	1383 nm [dB/km]	≤0.35	-	-	-	-
	1550 nm [dB/km]	≤0.20	-	-	-	-
	1625 nm [dB/km]	≤0.23	-	-	-	-
Bandwidth	850 nm [MHz/km]	-	≥500	≥200	≥2000	≥4700
	1300 nm [MHz/km]	-	≥500	≥600	≥500	≥500
Cladding Non-circularity	[%]	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0
Fatigue Resistance Parameter (Typical)	≥20	≥20	≥20	≥20	≥20	≥20

Outdoor Fiber Optic Cable

Outdoor Loose Tube Light Duty Non-metallic Cable

Application

- Backbone connection between buildings
- Other fiber optic connections in the outdoor area

Feature & Benefit

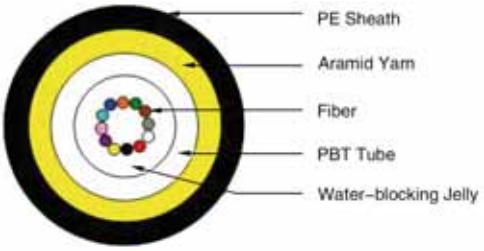
- High tensile strength and crush resistance
- Longitudinally and transversely water proof by gel-filled loose tubes
- Outer sheath made of PE, resistant of UV radiation
- Fiber count up to 144 cores

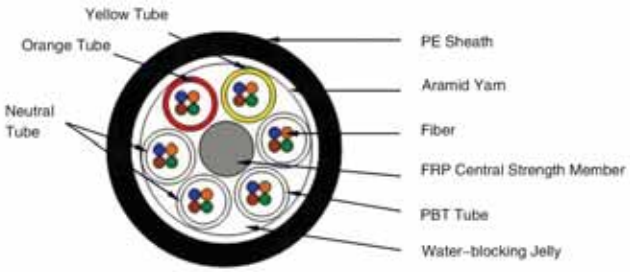
Specification

Mechanical Characteristic

Number of Fibers	Cable Diameter	Cable Weight	Max. Tensile Load	Min. Bending Radius (Installation)	Min. Bending Radius (Operation)	Crush Resistance
	[mm]	[kg/km]	[N]	[mm]	[mm]	[N/10cm]
4	7.6 (single)	80	700	152	76	250
6	7.6 (single)	80	700	152	76	250
8	7.6 (single)	80	700	152	76	250
10	7.6 (single)	80	700	152	76	250
12	7.6 (single)	80	700	152	76	250
16	9.6 (stranded)	80	700	192	96	250
18	9.6 (stranded)	80	700	192	96	250
24	9.6 (stranded)	80	700	192	96	250

Cable Construction





Environmental Specification

Transportation and storage [℃]:	-40 to + 70
Installation [℃]:	-20 to + 70
Operation [℃]:	-40 to + 70

Ordering Information

Number of Fibers	Part Number				
	E9/125	G50/125	G62.5/125	OM3	OM4
XXX	98A074-XXX	98A075-XXX	98A076-XXX	98A075S3-XXX	98A075S5-XXX

Fiber Optic Cable

Outdoor Loose Tube Heavy Duty Armored Cable

Application

- Backbone connection between buildings
- Other fiber optic connections in the outdoor area
- Direct burial & duct application

Feature & Benefit

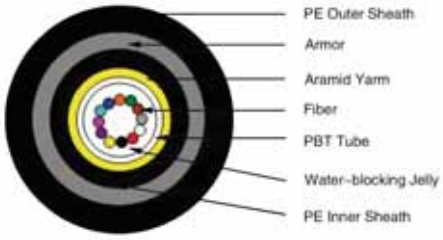
- Outer sheath made of PE, resistance of UV radiation
- Excellent tensile strength and crush resistance
- Longitudinally and transversely water proof gel-filled loose tubes
- Fiber count up to 144 cores

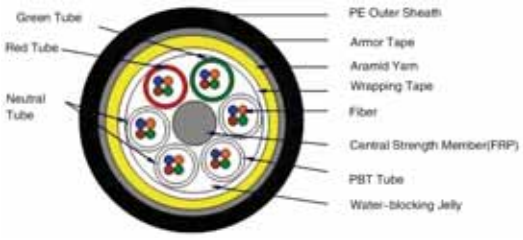
Specification

Mechanical Characteristic

Number of Fibers	Cable Diameter (Ref.)	Cable Weight	Max. Tensile Load	Min. Bending Radius (Installation)	Min. Bending Radius (Operation)	Crush Resistance	Combustion Energy
	[mm]	[kg/km]	[N]	[mm]	[mm]	[N/10cm]	[MJ/m]
4	14.0 (single)	210	2700	280	140	1000	3.0
6	14.0 (single)	210	2700	280	140	1000	3.0
10	14.0 (single)	210	2700	280	140	1000	3.0
12	14.0 (single)	210	2700	280	140	1000	3.0
16	14.0 (stranded)	210	2700	280	140	1000	3.4
18	14.0 (stranded)	210	2700	280	140	1000	3.4
24	14.0 (stranded)	210	2700	280	140	1000	3.4
36	15.7 (stranded)	250	2700	314	157	1000	3.4
48	15.7 (stranded)	250	2700	314	157	1000	3.4
72	17.4 (stranded)	290	2700	348	174	1000	5.4
144	20.0 stranded)	420	2700	400	200	1000	9.0

Cable Construction





Environmental Specification

Transport and storage [℃]:	-40 to + 70
Installation [℃]:	-20 to + 70
operation [℃]:	-40 to + 70

Ordering Information

Number of Fibers	Part Number				
	E9/125	G50/125	G62.5/125	OM3	OM4
XXX	98A077-XXX	98A078XXX	98A079-XXX	98A078S3-XXX	98A078S5-XXX

Outdoor Loose Tube Light Duty Armored Cable

Application

- Backbone connection between buildings
- Other fiber optic connections in the outdoor area
- Direct burial & duct application

Feature & Benefit

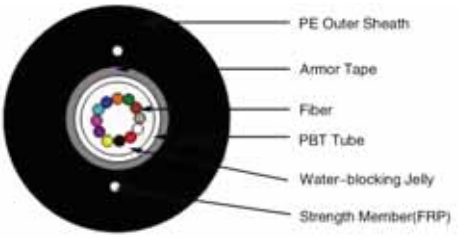
- High tensile strength and crush resistance
- Longitudinally and transversely water proof by gel-filled loose tubes
- Fiber count up to 144 cores

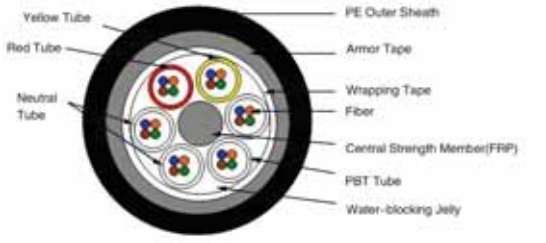
Specification

Mechanical Characteristic

Number of Fibers	Cable Diameter	Cable Weight	Max. Tensile Load	Min. Bending Radius (Installation)	Min. Bending Radius (Operation)	Crush Resistance	Combustion Energy
	[mm]	[kg/km]	[N]	[mm	[mm	[N/10cm]	[MJ/m]
4	8.9 (single)	120	700	178	89	500	3.0
6	8.9 (single)	120	700	178	89	500	3.0
8	8.9 (single)	120	700	178	89	500	3.0
10	8.9 (single)	120	700	178	89	500	3.0
12	8.9 (single)	120	700	178	89	500	3.0
16	11.1 (stranded)	130	700	222	111	500	3.4
18	11.1 (stranded)	130	700	222	111	500	3.4
24	11.1 (stranded)	130	700	222	111	500	3.4
48	- (stranded)	-	700	-	-	500	5.4
72	- (stranded)	-	700	-	-	500	5.4
144	- (stranded)	-	700	-	-	500	9.0

Cable Construction





Environmental Specification

Transport and storage [℃]:	-40 to + 70
Installation [℃]:	-20 to + 70
Operation [℃]:	-40 to + 70

Ordering Information

Number of Fibers	Part Number				
	E9/125	G50/125	G62.5/125	OM3	OM4
XXX	98A080-XXX	98A081-XXX	98A082-XXX	98A081S3-XXX	98A081S5-XXX

Fiber Optic Cable

HDCS® Universal Fiber Optical Cable

Application

- Multi–fiber backbone connections inside and between buildings
- Fiber optic cabling in data centers
- Connections between main and branch distributors

Feature & Benefit

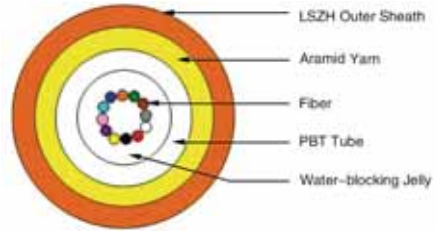
- Outer sheath can be made of LSZH,OFNR,OFNP.
- longitudinally water-resistant and moisture-proof by use of gel-filled loose tubes, non-metallic rodent protection as option.
- Fiber count up to 144 cores

Specification

Mechanical Characteristic

Number of Fibers	Cable Diameter	Cable Weight	Max Tensile Load	Min. Bending Radius (Installation)	Min. Bending Radius (Operation)	Max Crush Resistance
	[mm]	[kg/km]	[N]	[mm]	[mm]	[N/10cm]
1×4	8	65	1200	160	120	1000
1×6	8	65	1200	160	120	1000
1×8	8	65	1200	160	120	1000
1×12	8	65	1200	160	120	1000
2×8	12	100	2700	240	180	1000
2×12	12	100	2700	240	180	1000
3×12	12	150	2700	240	180	1000
4×12	12	150	2700	240	180	1000
6×12	12	180	2700	240	180	1000
12×12	16.8	330	2700	336	252	1000

Cable Construction



Environmental Specification

Transport and storage[℃]:	- 25 to + 70
Installation[℃]:	- 20 to + 60
Operation[℃]:	- 5 to + 50

Ordering Information

Number of Fibers	Universal Cable LSZH, Kevlar					Universal Cable LSZH, Rodent Protection				
	SM, 9/125µm	MM, 50/125µm	MM, 62.5/125µm	OM3	OM4	SM, 9/125µm	MM, 50/125µm	MM, 62.5/125µm	OM3	OM4
1X4	211311	211321	211331	211351	211361	211211	211221	211231	211251	211261
1X6	211312	211322	211332	211352	211362	211212	211222	211232	211252	211262
1X8	211313	211323	211333	211353	211363	211213	211223	211233	211253	211263
1X12	211314	211324	211334	211354	211364	211214	211224	211234	211254	211264
2X8	211315	211325	211335	211355	211365	211215	211225	211235	211255	211265
2X12	211316	211326	211336	211356	211366	211216	211226	211236	211256	211266
3X12	211317	211327	211337	211357	211367	211217	211227	211237	211257	211267
4X12	211318	211328	211338	211358	211368	211218	211228	211238	211258	211268
6X12	211319	211329	211339	211359	211369	211219	211229	211239	211259	211269
12X12	21131A	21132A	21133A	21135A	21136A	21121A	21122A	21123A	21125A	21126A

Number of Fibers	Universal Cable OFNR,Kevlar					Universal Cable OFNP,Kevlar				
	SM, 9/125µm	MM, 50/125µm	MM, 62.5/125µm	OM3	OM4	SM, 9/125µm	MM, 50/125µm	MM, 62.5/125µm	OM3	OM4
1X4	211611	211621	211631	211651	211661	211811	211821	211831	211851	211861
1X6	211612	211622	211632	211652	211662	211812	211822	211832	211852	211862
1X8	211613	211623	211633	211653	211663	211813	211823	211833	211853	211863
1X12	211614	211624	211634	211654	211664	211814	211824	211834	211854	211864
2X8	211615	211625	211635	211655	211665	211815	211825	211835	211855	211865
2X12	211616	211626	211636	211656	211666	211816	211826	211836	211856	211866
3X12	211617	211627	211637	211657	211667	211817	211827	211837	211857	211867
4X12	211618	211628	211638	211658	211668	211818	211828	211838	211858	211868
6X12	211619	211629	211639	211659	211669	211819	211829	211839	211859	211869
12X12	21161A	21162A	21163A	21165A	21166A	21181A	21182A	21183A	21185A	21186A

Fiber Optic Cable

FTTP Fiber Optical Cable

Application

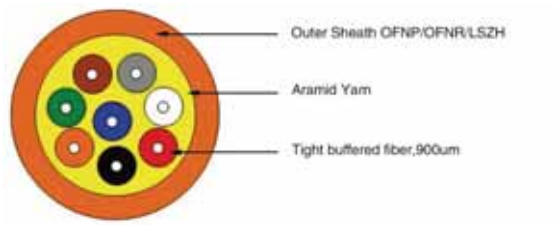
- Flexible horizontal cabling
- Connection to active components
- Building Backbone (distribution cable)

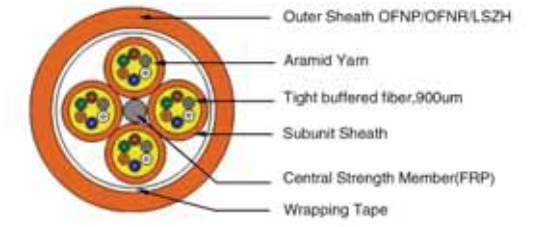
Feature & Benefit

- Indoor cable has good flame-retardant property and out sheath can be made of Riser, Plenum or LSZH
- UL approved (OFNR, OFNP)
- Available from 1 to 24 fibers
- Suited for field connector termination

Specification

Cable Construction





Distribution and FTTP Cable (Tight buffer type, OFNR rated)

Number of Fibers	Cable Diameter	Cable Weight	Max. Tensile Load	Min. Bending Radius (Installation)	Min. Bending Radius (Operation)	Crush Resistance
	[mm]	[kg/km]	[N]	[mm]	[mm]	[N/10cm]
1	2.9	9	400	50	30	300
2 (zipcord)	2x2.9	20	400	60	30	300
2 (distribution)	4.8	18	440	96	48	300
4 (distribution)	4.8	25	440	96	48	300
6(distribution)	4.8	25	440	96	48	300
8 (distribution)	6.2	37	440	124	62	300
12 (distribution)	6.2	37	440	124	62	300
24 (distribution)	14.5	177	1320	290	145	300

Ordering Information

OFNR Rated Cable	Simplex	Zipcord	2-Fiber	4-Fiber	6-Fiber	8-Fiber	12-Fiber	24-Fiber
9/125µm	98A004	98A050	98A068-002	98A068-004	98A068-006	98A068-008	98A068-012	98A068-024
50/125µm	98A008	98A049	98A069-002	98A069-004	98A069-006	98A069-008	98A069-012	98A069-024
OM3	98A008S3	98A086-001	98A084-002	98A084-004	98A084-006	98A084-008	98A084-012	98A084-024
OM4	98A008S5	98A049S5	98A149-002	98A149-004	98A149-006	98A149-008	98A149-012	98A149-024
62.5/125µm	98A012	98A048	98A070-002	98A070-004	98A070-006	98A070-008	98A070-012	98A070-024

Distribution and FTTP Cable (Tight buffer type, LSZH rated)

Number of Fibers	Cable Diameter	Cable Weight	Max. Tensile Load	Min. Bending Radius (Installation)	Min. Bending Radius (Operation)	Crush Resistance
	[mm]	[kg/km]	[N]	[mm]	[mm]	[N/10cm]
1	2.9	9	500	50	30	300
2 (zipcord)	2×2.9	20	600	60	30	300
2 (distribution)	5.2	18	800	104	52	300
4 (distribution)	5.2	22	800	104	52	300
6 (distribution)	5.2	27	1000	104	52	300
8 (distribution)	6.8	29	1000	136	68	300
12 (distribution)	7.2	48	1200	144	72	300
24 (distribution)	14.5	186	1320	290	145	300

Ordering Information

LSZH Cable	Simplex	Zipcord	2-Fiber	4-Fiber	6-Fiber	8-Fiber	12-Fiber	24-Fiber
9/125µm	98A028	98A017	98A100-002	98A100-004	98A100-006	98A100-008	98A100-012	98A100-024
50/125µm	98A062	98A093	98A101-002	98A101-004	98A101-006	98A101-008	98A101-012	98A101-024
OM3	98A062S3	98A086-003	98A101S3-002	98A101S3-004	98A101S3-006	98A101S3-008	98A101S3-012	98A101S3-024
OM4	98A062S5	98A093S5	98A101S5-002	98A101S5-004	98A101S5-006	98A101S5-008	98A101S5-012	98A101S5-024
62.5/125µm	98A029	98A019	98A102-002	98A102-004	98A102-006	98A102-008	98A102-012	98A102-024

Distribution and FTTP Cable (Tight buffer type, OFNP rated)

Number of Fibers	Cable Diameter	Cable Weight	Max. Tensile Load	Min. Bending Radius (Installation)	Min. Bending Radius (Operation)	Crush Resistance
	[mm]	[kg/km]	[N]	[mm]	[mm]	[N/10cm]
1	2.9	9	400	50	30	300
2 (zipcord)	2x2.9	20	400	60	30	300
2 (distribution)	4.8	18	440	96	48	300
4 (distribution)	4.8	25	440	96	48	300
6(distribution)	4.8	25	440	96	48	300
8 (distribution)	6.2	37	440	124	62	300
12 (distribution)	6.2	37	440	124	62	300
24 (distribution)	14.5	200	1320	290	145	300

Ordering Information

OFNP Rated Cable	Simplex	Zipcord	2-Fiber	4-Fiber	6-Fiber	8-Fiber	12-Fiber	24-Fiber
9/125µm	-	98A127-001	98A114-002	98A114-004	98A114-006	98A114-008	98A114-012	98A114-024
50/125µm	-	98A127-002	98A113-002	98A113-004	98A113-006	98A113-008	98A113-012	98A113-024
OM3	-	98A086-002	98A113S3-002	98A113S3-004	98A113S3-006	98A113S3-008	98A113S3-012	98A113S3-024
OM4		98A127S5-002	98A113S5-002	98A113S5-004	98A113S5-006	98A113S5-008	98A113S5-012	98A113S5-024
62.5/125µm	98A131	98A027	98A115-002	98A115-004	98A115-006	98A115-008	98A115-012	98A115-024

Fiber Optic Cable

Indoor Tight Buffer Armored Cable

Application

- Flexible horizontal cabling
- Structure cabling building backbone

Feature & Benefit

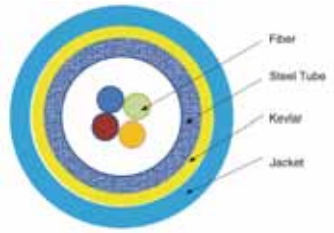
- Indoor cable has good flame-retardant property and out sheath can be Riser, Plenum or LSZH
- UL approved (OFNR, OFNP)
- Available from 1 to 12 fibers
- Flexible cable for horizontal application
- High crush resistance force

Specification

Mechanical Characteristic

Number of Fibers	Cable Diameter	Cable Weight	Max Tensile Load	Min. Bending Radius (Installation)	Min. Bending Radius (Operation)	Max Crush Resistance
	[mm]	[kg/km]	[N]	[mm]	[mm]	[N/10cm]
6	5.0	28	1000	100	50	3000
8	5.5	28	1000	110	55	3000
10	6.0	28	1000	120	60	3000
12	7.5	28	1000	150	75	3000

Cable Construction



Environmental Specification

Transport and storage[℃]:	- 40 to + 70
Installation[℃]:	- 20 to + 70
Operation[℃]:	- 40 to + 50

Ordering Information

Number of Fibers	Part Number (OFNR)			
	E9/125	G50/125	OM3	OM4
XXX	98A269-XXX	98A270-XXX	98A271-XXX	98A272-XXX

Number of Fibers	Part Number (OFNP)			
	E9/125	G50/125	OM3	OM4
XXX	98A273-XXX	98A274-XXX	98A275-XXX	98A276-XXX

Number of Fibers	Part Number (LSZH)			
	E9/125	G50/125	OM3	OM4
XXX	98A210-XXX	98A211-XXX	98A212-XXX	98A267-XXX

2 PRECONNECT ® *Fiber Optic Trunk*

Application

- Campus and inter-building backbone cabling
- Industrial plant cabling
- Fiber-optic cabling in data centers

Feature & Benefit

- Quick and easy installation, saving on-site labor cost
- Guarantee high reliability based on 100% performance test and quality inspection in factory, as well as effective protection over cable and connectors
- Fiber and connector surface are being protected by using waterproof material, as well as torsion and crush resistant, installation tubes
- Cable divider and installation tube guarantee a tensile force >500N

Optical Cable

- Central or stranded loose tube construction, high tensile strength and impact resistance
- Polyethylen (PE)-sheath for outdoor installation
- LSZH sheath complies with IEC60332-3, IEC 61034-2 and IEC60754-2

Fiber Type

- Available from 4 to 144 fibers of the types 9/125µm, 50/125µm, 62.5/125µm,OM3 and OM4

Connector Type

- FC, SC, ST, LC (ceramic ferrule)
- MT-RJ, SC-DC (Small Form Factor, epoxy-compound ferrule)
- MTP

Fiber Assignment

- No crossover or crossover within each channel
- Numerical and color code assignment

Delivery

- Delivery on a recyclable cardboard drum or box
- Installation guide enclosed
- Test datasheet enclosed

PRECONNECT® Fiber Optic Trunk

PRECONNECT® *Cables for Outdoor Application*

Application

- Campus backbone cabling
- Industrial plant Cabling

Feature & Benifit

- Cable with loose tube construction, outer sheath made of Polyethylen (PE), high tensile strength and crush resistance
- Non-metallic strain relief elements
- Longitudinally and transversely waterproof due to water blocking fleece and gel-filled loose tubes
- Non-metallic elements for rodent-resistance

Specification

Number of Fibers	4	8	12	16	24	48	72
Length of Legs [cm]	85-100	65-100	45-100	54.5-84	38.5-84	50 –65	45 –70
Diameter Installation Tube [mm]	28	28	28	35	35	60	60
Max. Tensile Force Installation Tube [N]	600	600	600	600	600	600	600
Max. Tensile Force Cable [N]	2500	2500	2500	2500	250	4000	4000
Min. Bending Radius (Installation) [mm]	200	200	200	210	210	270	290
Min. Bending Radius (Operation) [mm]	150	150	150	157	157	202	220
Crush Resistance Installation Tube [N/cm]				100			
Crush Resistance Cable [N/cm]				300			
Diameter Cable Drum [mm]				800			
Temperature Range (Installation) [°C]				0 to +50			
Temperature Range (Operation) [°C]				-20 to +60			

Ordering Information

Rosenberger's **PRECONNECT®** cables for outdoor application are ordered using three digits: Digit1, Fiber type selection; Digit2, Connector type selection; Digit3, Number of fibers selection, the format and digits are listed below.

201 X X X

	Digit1: Fiber type	Digit2: Connector type	Digit3: Number of fibers
PRECONNECT® Cables for Outdoor Application	X	X	X
201	1: SM, 9/125µm	1: SC/SC	1: 4
	2: MM,50/125µm	2: ST/ST	2: 6
	3: MM,G62.5/125µm	3: SC/ST	3: 8
	5: OM3	4: FC/FC	4: 12
	6: OM4	5: SC-DC/SC-DC	5: 16
		6: MTRJ/MTRJ	6: 24
		7: LC/LC	7: 36
		8: FC/ST	8: 48
		9: FC/FC-APC	9: 72
		A: LC/SC	A: 144
		B: FC/SC	
		C: FC-APC/FC-APC	
		F: MTP/MTP	
		M: MTP/LC	

PRECONNECT® *Cables for Indoor Application*

Application

- Inter-building backbone cabling
- Connection between equipment room and floor telecom closet
- Fiber optic cabling in data centers

Feature & Benifit

- Cable with loose tube construction, outer sheath made of FR-LSZH material, non-metallic strain relief elements
- Optionally with rodent protection
- Longitudinally and transversely waterproof due to water blocking fleece and gel-filled loose tubes
- Flame retardant acc. to IEC 60332-1 and IEC 60332-3 C
- No corrosive gas emission acc. to IEC 60754-2
- Low smoke emission acc. to IEC 61034-2
- Installation tube acc. to IP50, dust protected, crush resistant

Specification

Number of Fibers	4	8	12	16	24	48	72
Length of Legs [cm]	85-100	65-100	45-100	54.5-84	38.5-84	50 –65	45 –70
Diameter Installation Tube [mm]	28	28	28	35	35	60	60
Max. Tensile Force Installation Tube [N]		500			600		
Max. Tensile Force Cable [N]	1200	1200	1200	1200	1200	3000	3000
Min. Bending Radius (Installation) [mm]	160	160	160	164	164	240	250
Min. Bending Radius (Operation) [mm]	120	120	120	128	128	180	188
Crush Resistance Installation Tube [N/cm]				100			
Crush Resistance Cable [N/cm]	150	150	150	150	150	200	200
Diameter Cable Drum [mm]				800			
Temperature Range (Installation) [°C]				0 to +50			
Temperature Range (Operation) [°C]				-20 to +60			

Ordering Information

Rosenberger's **PRECONNECT®** cables for outdoor application are ordered using four digits:Digit1, Sheath type selection;Digit2,Fiber type selection; Digit3,Connector type selection;Digit4,Number of fibers selection,the format and digits are listed below.

20X

Digit1:sheath

X ↓ Digit2: Fiber type

X ↓ Digit3: Connector type

X ↓ Digit4: Number of fibers

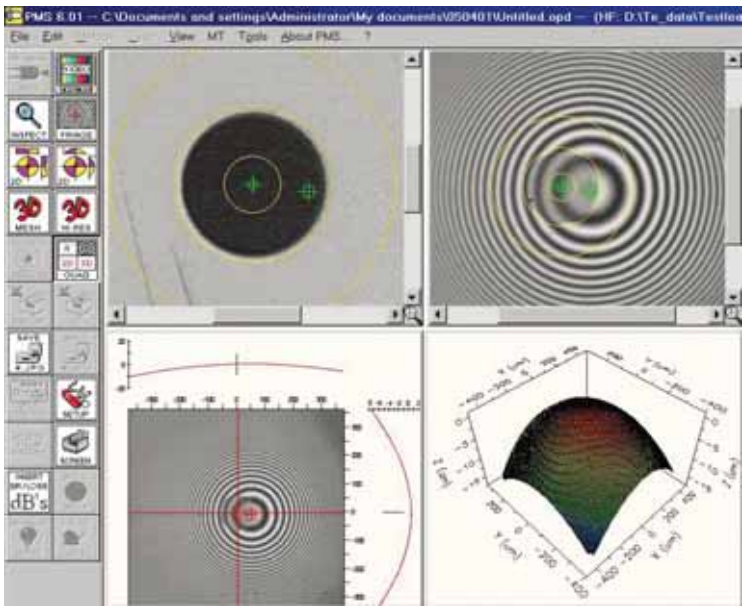
PRECONNECT® Cables for Outdoor Application		**X**	**X**	**X**
20	3: LSZH 6: OFNR 8: OFNP	1: SM, 9/125µm	1: SC/SC	1: 4
		2: MM, 50/125µm	2: ST/ST	2: 6
		3: MM, G62.5/125µm	3: SC/ST	3: 8
		5: OM3	4: FC/FC	4: 12
		6: OM4	5: SC-DC/SC-DC	5: 16
			6: MTRJ/MTRJ	6: 24
			7: LC/LC	7: 36
			8: FC/ST	8: 48
			9: FC/FC-APC	9: 72
			A: LC/SC	A: 144
			B: FC/SC	
			C: FC-APC/FC-APC	
			F: MTP/MTP	
			M: MTP/LC	

3 Fiber Optic Cable Assembly

Fiber optic patch cords, both simplex and duplex versions, are used to set up connection between the fiber optical interfaces of optical distribution frame or patch panel via patching. Fiber optic pigtail, which is the fiber cable assembly with a connector on one side, is applied to splice with distribution cable or backbone cable inside optical distribution frame or fiber patch panel.

Halogen free and fire-retardant cables are optional and recommended to assemble patch cords or pigtails. The selected connectors meet requirements of related IEC standards. Fiber is fixed in the ceramic ferrule by using an epoxy gluing process. Advanced PC and APC polishing process for both single fiber and multi-fiber connector, guarantee a minimum insertion loss, as well as excellent return loss level. The excellent optical and mechanical performance ensures a long lifetime of the assemblies.

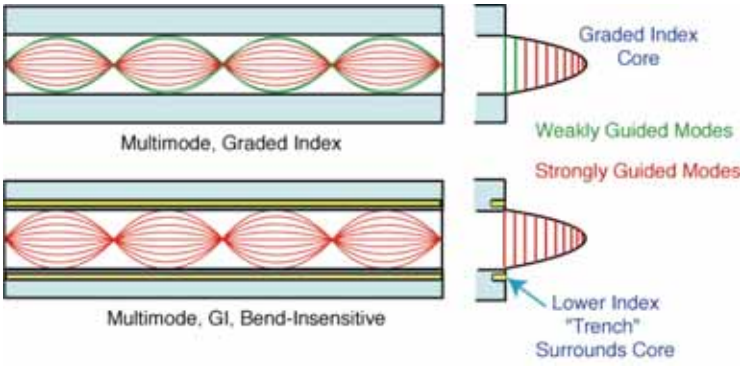
The whole manufacturing process is 100% under monitored and controlled as per documented and consistent procedure and instructions. Professional connector end-face geometric inspection and control are performed.



Rosenberger recommends using "Bending Insensitivity" fiber patch cord in high density fiber applications. It can obviously decrease the attenuation while manage the fiber patch cord.

Bend-insensitive fiber adds a layer of glass around the core of the fiber which has a lower index of refraction that literally "reflects" the weakly guided modes back into the core when stress normally causes them to be coupled into the cladding.

An optical "trench" - the term used for a ring of lower index of refraction material - was built into the fiber to basically reflect the lost light back into the core of the fiber. You can see it in the drawing below.



Fiber Optic Cable Assembly

Patch Cord

Application

- Channel to channel connection of fiber optic lines installed within distribution panels
- Connection of peripheral devices with a fiber optic interface

Property

- Outer sheath made of riser, plenum or FR-LSZH material
- Supplies cable constructions with simplex cable, duplex cable, mini-zipcord cable, ribbon cable other types of cables on request

Fiber Type

- Available of the types 9/125µm, 50/125µm, 62.5/125µm, OM3, OM4

Connectivity System

- Rosenberger patch cords can be delivered with the connectors as ST, SC, FC, LC, MU, MTRJ, MTP, ESCON, SCDC, 2000, DIN

Delivery

- Patch cord separately packed in plastic bag
- Labeled with serial number
- 100% tested and results offered

Specification

- Insertion loss determined acc. to IEC 61300-3-4
- Return loss determined acc. to IEC 61300-3-6
- 100% performance testing
- Providing test report for 3D geometric characteristics of connector end-face as required

Cable Property

Number of Fibers	1	2	2
Cable Construction	Simplex	Duplex	Mini-Zip-Cord
Cable Cross Section	2.9mm	5.8X2.9mm	1.8X3.7mm
Max Tensile Strength	400	400	400
Max. Crush Resistance [N/cm]	15	30	30
Min. Bending Radius [mm]	30	30	30

Environmental Specification

Transportation and Storage[℃]: -25 ~ +70
Operation[℃]: -5 ~ +70

Pigtail

Application

- On-site splicing with bulk cable
- Fiber To The Desk
- Other scenarios where fiber termination is required

Property

- Cable pigtail:
  Simplex cable with outer sheath made of riser, Plenum or LSZH.
- Fiber Pigtail: Compact fiber (900μm buffered fiber)

Fiber Type

- Optional fiber types: 9/125μm, 50/125μm ,62.5/125μm,OM3, OM4

Connectivity System

- Rosenberger patch cords can be delivered with the following connectors:
  ST, SC, FC, LC, MU, MTRJ, E2000, DIN, etc.

Delivery

- Separately packed in plastic bag, including serial number and attenuation data

Fiber Optic Cable Assembly

Specification

- Insertion loss determined acc. to IEC 61300-3-4
- Return loss determined acc. to IEC 61300-3-6
- 100% performance testing
- Providing test report for 3D geometric characteristics of connector end-face as required

Ordering Information

Rosenberger patch cords and pigtails are ordered using eight digits: Digit1, Fiber type selection; Digit2, Cable diameter selection; Digit3, Number of fibers selection, Digit4, Polishing level selection for SM or Core diameter selection for MM ; Digit5& Digit6, Connector type selection; Digit7, Selection; Digit8, Length selection, The format and digits are listed below.

Single-mode Patch cord or Pigtail

98C	X ↓ Digit1	X ↓ Digit2	X ↓ Digit3	X ↓ Digit4	X ↓ Digit5	X ↓ Digit6	X ↓ Digit7	XXXX ↓ Digit8
	X	X	X	X	X	X	X	XXXX
	S: SM Riser	2: 2mm	0: pigtail	1: UPC-UPC	1: ST	1: ST	M: meter	Cable length XXX.X meter
	E: SM LSZH	3: 3mm	1: patchcord	2: Null	2: SC	2: SC		
	Z: SM Plenum	6: 1.6mm	2: Duplex pigtail	3: APC-APC	3: FC	3: FC	F: feet	Cable length XXX.X feet
	P: SM G655 Riser	8: 1.8mm	3: Duplex patchcord	4: PC-APC	4: LC	4: LC		
		9: 0.9mm	4: Duplex pigtail (separately)	5: APC-PC	5: MU	5: MU		
	L: G657A LSZH				6: MT-RJ(F)	6: MT-RJ(F)		
98C	1: G657A OFNR		5: Duplex patchcord (separately)		7: MT-RJ(M)	7: MT-RJ(M)		
	2: G657A OFNP				8: MTP(F)	8: MTP(F)		
	Y: G655 LSZH		6: Uniboot		9: E2000	9: E2000		
					A: FSMA	A: FSMA		
					B: MTP(M)	B: MTP(M)		
					C: ESCON	C: ESCON		
					D: SCDC	D: SCDC		

Multi-mode Patch Cord or Pigtail

98C	X ↓ Digit1	X ↓ Digit2	X ↓ Digit3	X ↓ Digit4	X ↓ Digit5	X ↓ Digit6	X ↓ Digit7	XXXX ↓ Digit8
	X	X	X	X	X	X	X	XXXX
	M: MM Riser	2: 2mm	0: pigtail	5: 50/125	1: ST	1: ST	M: meter	Cable length XXX.X meter
	F: MM LSZH	3: 3mm	1: patchcord	6: 62.5/125	2: SC	2: SC		
	J: MM Plenum	6: 1.6mm	2: Duplex pigtail	7: 100/140	3: FC	3: FC	F: feet	Cable length XXX.X feet
	G:10G Riser (OM3)	8: 1.8mm	3: Duplex patchcord	B: BI fiber*	4: LC	4: LC		
		9: 0.9mm	4: Duplex pigtail (separately)		5: MU	5: MU		
	H:10G LSZH (OM3)				6: MT-RJ(F)	6: MT-RJ(F)		
98C			5: Duplex patchcord (separately)		7: MT-RJ(M)	7: MT-RJ(M)		
	N:10G Plenum (OM3)				8: MTP(F)	8: MTP(F)		
			6: Uniboot		9: E2000	9: E2000		
	V:10G OFNR (OM4)				A: FSMA	A: FSMA		
					B: MTP(M)	B: MTP(M)		
	X:10G LSZH (OM4)				C: ESCON	C: ESCON		
					D: SCDC	D: SCDC		

Single-mode Patch Cord or Pigtail (Multi-fiber)

98C	X Digit1	X Digit2	X Digit3	X Digit4	X Digit5	X Digit6	X Digit7	XXXX Digit8
	X	X	X	X	X	X	X	XXXX
	A:SM ribbon	A: 2 core	0: pigtail	1: UPC-UPC	1: ST	1: ST	M: meter	Cable length XXX.X meter
	C:SM breakout	B: 4 core	1: patchcord	2: Null	2: SC	2: SC		
	3 :G657 ribbon	C: 6 core	2: Duplex pigtail	3: APC-APC	3: FC	3: FC	F: feet	Cable length XXX.X feet
		D: 8 core	3: Duplex patchcord	4: PC-APC	4: LC	4: LC		
		E: 12 core	4: Duplex pigtail (separately)	5: APC-PC	5: MU	5: MU		
		F: 24 core			6: MT-RJ(F)	6: MT-RJ(F)		
98C		G: 36 core	5: Duplex patchcord (separately)		7: MT-RJ(M)	7: MT-RJ(M)		
		H: 48 core			8: MTP(F)	8: MTP(F)		
			6: Uniboot		9: E2000	9: E2000		
					A: FSMA	A: FSMA		
					B: MTP(M)	B: MTP(M)		
					C: ESCON	C: ESCON		
					D: SCDC	D: SCDC		

Multi-mode Patch Cord or Pigtail (Multi-fiber)

98C	X Digit1	X Digit2	X Digit3	X Digit4	X Digit5	X Digit6	X Digit7	XXXX Digit8
	X	X	X	X	X	X	X	X
	B:MM ribbon	A: 2 core	0: pigtail	5: 50/125	1: ST	1: ST	M: meter	Cable length XXX.X meter
	D:MM breakout	B: 4 core	1: patchcord	6: 62.5/125	2: SC	2: SC		
	T :OM3 BI* ribbon	C: 6 core	2: Duplex pigtail	7: 100/140	3: FC	3: FC	F: feet	Cable length XXX.X feet
	K:OM4 ribbon	D: 8 core	3: Duplex patchcord		4: LC	4: LC		
		E: 12 core	4: Duplex pigtail (separately)		5: MU	5: MU		
		F: 24 core			6: MT-RJ(F)	6: MT-RJ(F)		
98C		G: 36 core	5: Duplex patchcord (separately)		7: MT-RJ(M)	7: MT-RJ(M)		
		H: 48 core			8: MTP(F)	8: MTP(F)		
			6: Uniboot		9: E2000	9: E2000		
					A: FSMA	A: FSMA		
					B: MTP(M)	B: MTP(M)		
					C: ESCON	C: ESCON		
					D: SCDC	D: SCDC		

*BI: Bending Insensitivity

4 Fiber Optic Connector

STII Fiber Optic Connector

Feature & Benifit

- EN 50173 recommended connector
- With bayonet-locking mechanism
- Comply with TIA/EIA 568 and IEC874-10

Fiber Type

- Multimode: 62.5/125μm, 50/125μm
- Singlemode: 9/125μm

Material

- Ferrule: Zirconia ceramic
- Connector body: Metal

Speification

- Insertion Loss:

	Singlemode	Multimode
Typical	0.20dB	0.20dB
Maximum	0.40dB	0.40dB

- Insertion loss change after 1000 mating cycles: ≤0.2dB
- Temperature range: -40°C ~ +80°C, 40 cycles, variation of insertion loss: <0.3dB
- Max. tension: 88N- attenuation change: ≤0.2dB
- Return loss: for SM ≥45dB

Applicable Cable

- 0.9mm semi-tight buffered fiber
- 2.0mm simplex/duplex cable
- 2.9mm simplex/duplex cable

Ordering Information

Cable Diameter	Singlemode	Boot Color	Multimode	Boot Color
0.9mm	98F01-22	Yellow	98F01-21	Black
2.0mm	98F01-24	Yellow	98F01-23	Black
3.0mm	98F01-26	Yellow	98F01-25	Black

SC Fiber Optic Connector

Feature & Benifit

- EN 50173 recommended connector
- With push-pul locking mechanism
- SC specification according to TIA/EIA 568 and IEC874-14

Fiber Type

- Multimode: 62.5/125µm, 50/125µm
- Singlemode: 9/125µm

Material

- Ferrule: Zirconia ceramic
- Connector body: composite plastic
- Housing color: Blue - singlemode UPC
  Green - singlemode APC
  Beige - multimode

Performance

- Insertion Loss:

	Singlemode	Multimode
Typical	0.20dB	0.20dB
Maximum	0.40dB	0.40dB

- Insertion loss variation after 1000 mating cycles: ≤0.2dB
- Temperature range: -40°C ~ +80°C, 40 cycles, variation of insertion loss: <0.3dB
- Max. tension: 88N- attenuation variation: ≤0.2dB
- Return Loss: SM UPC ≥45dB
  SM APC ≥60dB

Applicable Cable

- 0.9mm semi-tight buffered fiber
- 2.0mm simplex/duplex cable
- 2.9mm simplex/duplex cable

Ordering Information

Cable Diameter	Singlemode UPC	Singlemode APC	Multimode
0.9mm buffer	98F02-71	98F02-41	98F02-73
2.0mm simplex	98F02-76	98F02-42	98F02-78
3.0mm simplex	98F02-60	98F02-43	98F02-62
2.0mm duplex	98F02-64		98F02-67
3.0mm duplex	98F02-80		98F02-83

Fiber Optic Connector

FC Fiber Optic Connector

Feature & Benifit

- FC specification according to IEC60874-7
- Twist protection pin
- End face geometry ferrule: convex
- FC-APC angled with 8°

Fiber Type

- Multimode: 62.5/125µm, 50/125µm
- Singlemode: 9/125µm

Material

- Ferrule: Zirconia ceramic
- Connector body: brass, nickel plated

Specification

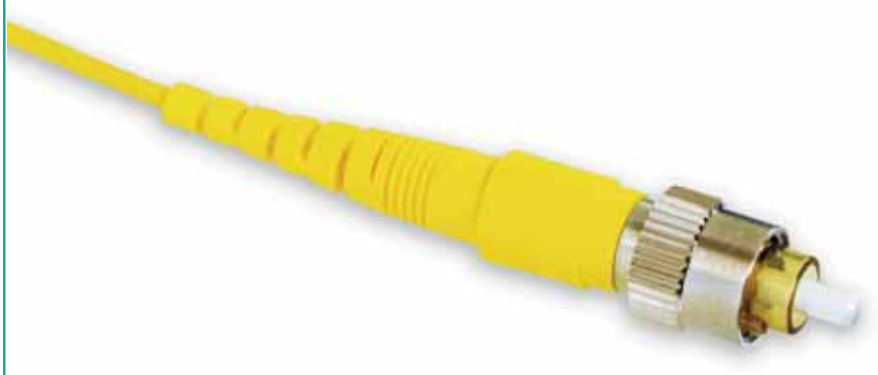
- Insertion Loss:

	Singlemode	Multimode
Typical	0.20dB	0.20dB
Maximum	0.40dB	0.40dB

- Insertion loss variation after 1000 mating cycles: ≤0.2dB
- Temperature range: -40°C ~ +80°C, 40 cycles, variation of insertion loss: <0.3dB
- Max. tension: 88N- attenuation change: ≤0.2dB
- Return Loss: SM UPC ≥45dB
  SM APC ≥ 60dB

Applicable Cable

- 0.9mm semi-tight buffered fiber
- 2.0mm simplex/duplex cable
- 2.9mm simplex/duplex cable



Ordering Information

Cable Diameter	Singlemode UPC	Boot Color	Singlemode APC	Boot Color	Multimode	Boot Color
0.9mm buffer	98F03-14	Yellow	98F03-23	Green	98F03-13	Black
2.0mm	98F03-16	Yellow	98F03-11	Green	98F03-15	Black
3.0mm	98F03-18	Yellow	98F03-12	Green	98F03-17	Black

LC Fiber Optic Connector

Feature & Benifit

- Small Form Factor connectivity system
- High density cabling for Telecom and LAN

Fiber type

- Multimode: 62.5/125μm, 50/125μm
- Singlemode: 9/125μm

Material

- Ferrule:Zirconia ceramic, diameter 1.25mm
- Connector body: Composite plastic
- Housing color: Blue – singlemode UPC
  Green– singlemode APC
  Beige– multimode

Performance

- Insertion Loss:

	Singlemode	Multimode
Typical	0.20dB	0.20dB
Maximum	0.30dB	0.30dB

- Insertion loss variation after 1000 mating cycles: ≤0.2dB
- Temperature range: -40°C ~ +80°C, 40 cycles, variation of insertion loss: <0.3dB
- Max. tension: 88N- attenuation variation: ≤0.2dB
- Return Loss: SM UPC≥45dB
  SM APC≥60dB

Applicable Cable

- 0.9mm semi-tight buffered fiber
- 2.0mm simplex/duplex cable
- 2.9mm simplex/duplex cable

Ordering Information

Cable Diameter	Singlemode UPC	Boot Color	Singlemode APC	Boot Color	Multimode	Boot Color
0.9mm buffer	98F04-01	White	98F04-32	Green	98F04-03	White
1.6~2.0mm simplex	98F04-04	Blue	98F04-31	Green	98F04-05	Black
1.6~2.0mm simplex	98F04-23	White	-	-	98F04-06	White
1.6~2.0mm duplex	98F04-24	Blue	98F04-42	Green	98F04-08	Black
1.6~2.0mm duplex	98F04-07	White	-	-	98F04-09	White
2.9mm simplex	98F04-38	Blue	98F04-33	Green	98F04-39	White
2.9mm duplex	98F04-40	Blue	98F04-34	Green	98F04-41	White

Fiber Optic Connector

MU Fiber Optic Connector

Feature & Benifit

- Small Form Factor connectivity system
- Mainly used for backplane connection
- Push-pull mechanism

Fiber Type

- Multimode: 62.5/125μm, 50/125μm
- Singlemode: 9/125μm

Material

- Ferrule: Zirconia ceramic, diameter 1.25mm
- Connector body: composite plastic
- Housing color: Blue – singlemode
  Brown– multimode

Specification

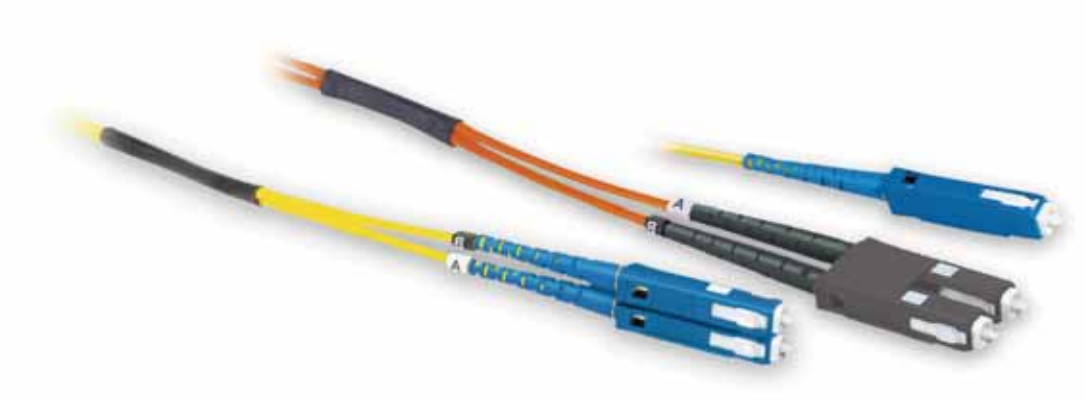
- Insertion Loss:

	Singlemode	Multimode
Typical	0.20dB	0.20dB
Maximum	0.40dB	0.40dB

- Insertion loss variation after 1000 mating cycles: ≤0.2dB
- Temperature range: -25°C ~ +70°C,100 cycles, variation of insertion loss: <0.3dB
- Max. tension: 88N- attenuation change:≤0.2dB
- Return Loss: SM UPC ≥45dB

Applicable Cable

- 0.9mm semi-tight buffered fiber
- 2.0mm simplex/duplex cable



Ordering Information

Cable Diameter	Singlemode UPC	Boot Color	Multimode	Boot Color
0.9mm buffer	98F05-01	Greyish blue	98F05-02	Black
2.0mm simplex	98F05-03	Greyish blue	98F05-04	Black
2.0mm duplex	98F05-06	Greyish blue	98F05-08	Black

MTRJ Fiber Optic Connector

Feature & Benifit

- Small form-factor duplex connector
- Standardized as FOCIS 12 in EIA/TIA-604-12
- Use pin for alignment, male and female version
- Structure: flat at polished ferrule with fiber protrusion

Application

- As optical interfaces of active components: transceiver, switches, hubs, etc
- Fiber cabling systems: **PRECONNECT®**

Fiber types

- Multimode: 62.5/125µm, 50/125µm
- Singlemode: 9/125µm

Material

- Ferrule: composite material
- Connector body: composite plastic

Specification

- Insertion Loss:

	Singlemode	Multimode
Typical	0.35dB	0.35dB
Maximum	0.50dB	0.50dB

Applicable Cable

- 2 fiber ribbon cable (diameter 2.9mm)
- 1.8mm zipcord cable

Ordering Information

Cable Diameter	Singlemode		Multimode	
2.9mm/1.8mm Mini-zipcord	Male	Female	Male	Female
	98F06-10	98F06-09	98F06-12	98F06-11

Fiber Optic Connector

MTP Fiber Optic Connector

Feature & Benifit

- Multi-fiber connector, terminate 6, 8 or 12 fibers
- Defined in standard IEC 61754-7
- Push-pull locking mechanism
- Precise fiber alignment by use of guide pins

Fiber Type

- Multimode: 62.5/125µm, 50/125µm
- Singlemode: 9/125µm

Material

- Ferrule: composite material
- Connector body: composite plastic
- Structure: flat polished ferrule with fiber protrusion for Multimode, 8° APC for Singlemode
- Housing color: Green – singlemode 8° APC
  Beige – multimode
  Aqua – OM3

Specification

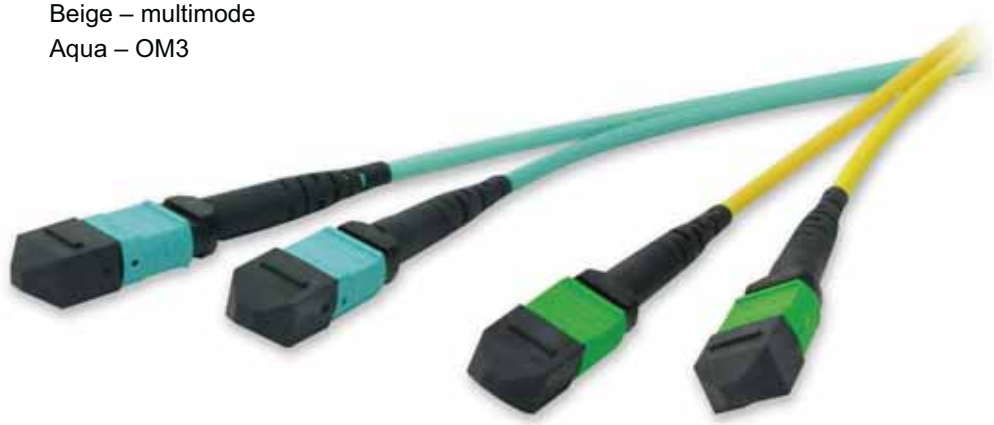
- Insertion Loss:

	Singlemode	Multimode
Typical	0.20dB	0.20dB
Maximum	0.60dB	0.45dB

- Attenuation change after 1000 mating cycles:≤0.2dB

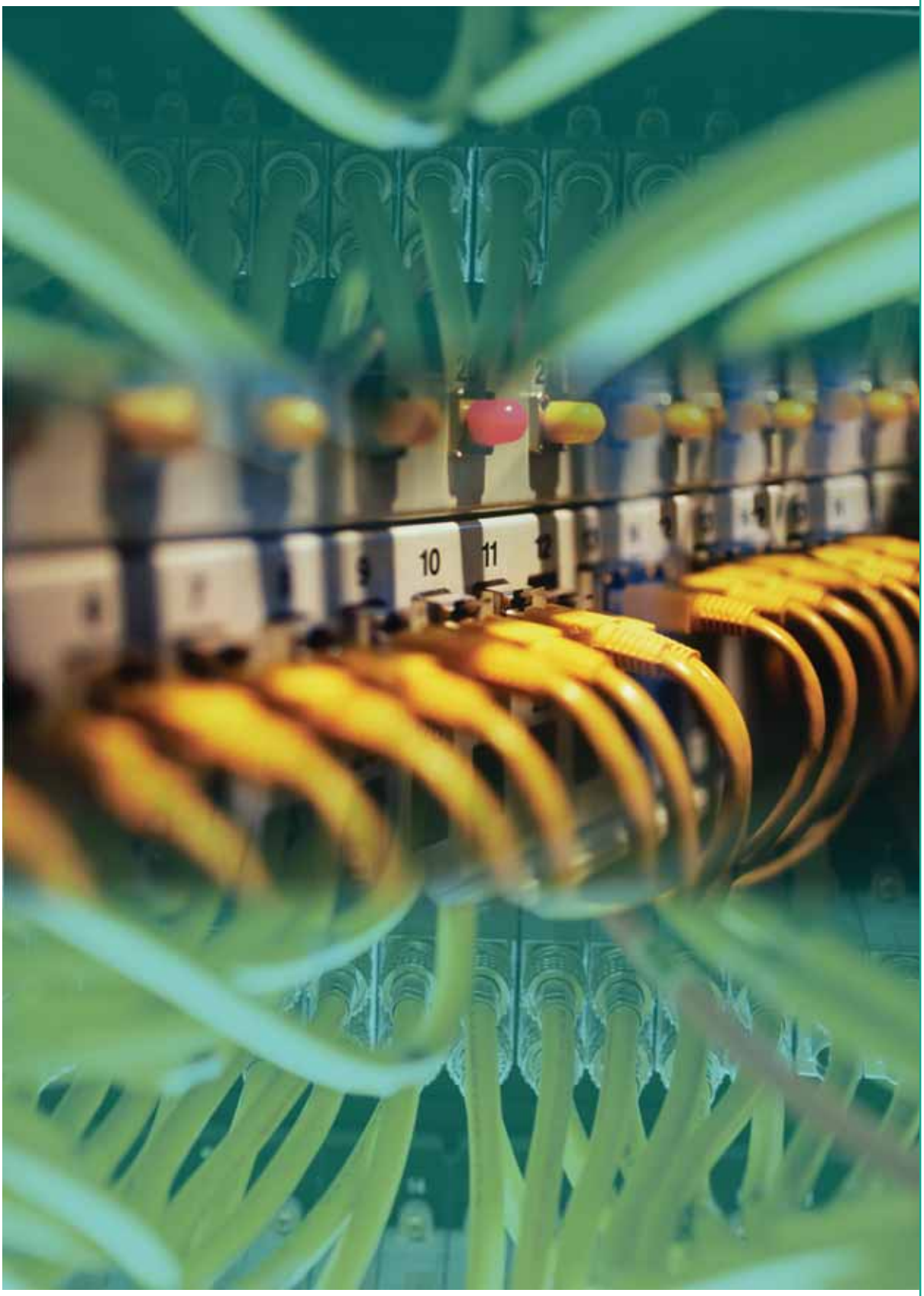
Applicable Cable

- Round cable: 3.0mm



Ordering Information

Singlemode APC		Singlemode APC Elite		Multimode OM3		Multimode OM3 Elite	
Female	Male	Female	Male	Female	Male	Female	Male
98F08-13	98F08-14	98F08-20	98F08-21	98F08-18	98F08-19	98F08-11	98F08-12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5 Adapter

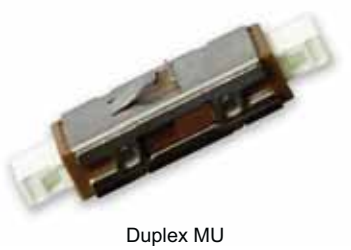
The fiber-optic adapters are used to link fiber optic connectors terminated on a fiber optic cable and are usually mounted in 19" patch panels and wall outlets. *HDCS*® adapters provide a reliable, low insertion loss interconnection because the fiber is precisely aligned by a ceramic sleeve. The metal body ST- and SC-couplers guarantee a high mechanical long-term stability and reproducible mating. The Small-Form-Factor LC and MT-RJ-coupler enable an increase of density by 100% through interconnecting two fibers provided by the referring MT-RJ and LC-duplex connector.

HDCS® offers all industry standard fiber optic adapters, which meet the requirements of diversified application scenario of cabling system.

Feature & Benefit

- Comply with international standards
- Low connection loss
- Singlemode or Multimode
- Metal or Plastic Housing
- Bronze or Ceramic Alignment Sleeves
- Simplex or Duplex
- Flange-less or w/ flange
- Hybrid type available

Simplex SC



Duplex MU

Duplex LC

Duplex LC, with cover

FC, D-Type

FC, Square-Type

MTRJ

ST

E2000

Ordering Information

HDCS® PN	Description	Sleeve Material	Color
98E-01	LC/PC, MM duplex adapter	Ceramic Sleeve	Beige
98E-02	LC/PC, SM duplex adapter	Ceramic Sleeve	Blue
98E-03	MT-RJ Standard Adapter	NA	Black
98E-04	ST SM/MM simplex adapter, metal housing	Ceramic Sleeve	Metal
98E-05	ST MM simplex adapter, metal housing	Phosphor bronze	Metal
98E-06	ST SM/MM duplex adapter, metal housing	Ceramic Sleeve	Metal
98E-07	ST MM duplex adapter, metal housing	Phosphor bronze	Metal
98E-08	SC/PC MM simplex adapter	Ceramic Sleeve	Beige
98E-09	SC/PC SM simplex adapter	Ceramic Sleeve	Blue
98E-10	SC/PC MM duplex adapter, w/ flange	Ceramic Sleeve	Beige
98E-11	SC/PC SM duplex adapter, w/ flange	Ceramic Sleeve	Blue
98E-12	SC/ST SM/MM simplex adapter, metal, Rectangular	Ceramic Sleeve	Metal
98E-13	SC/ST SM/MM adapter, metal housing with flange	Ceramic Sleeve	Metal
98E-14	FC/PC/APC SM/MM simplex adapter, D-D Style	Ceramic Sleeve	Metal
98E-15	FC/PC/APC SM/MM simplex adapter, Square	Ceramic Sleeve	Metal
98E-16	FC/SC (PC&APC) simplex adapter, Square, Metal	Ceramic Sleeve	Metal
98E-18	MPO/MPO Adapter	NA	Black
98E-22	FC/ST adapter, metal housing, rectangular flange	Ceramic Sleeve	Metal
98E-23	SC/PC SM simplex adapter, round flange	Ceramic Sleeve	Blue
98E-25	LC-MU Simplex Adapter	Ceramic Sleeve	Blue/ Brown
98E-31	LC/PC SM duplex adapter snap-latch fixing	Ceramic Sleeve	Blue
98E-33	MU-MU simplex adapter	Ceramic Sleeve	Brown
98E-34	MU-MU duplex adapter	Ceramic Sleeve	Brown
98E-35	MU-SC simplex adapter	Ceramic Sleeve	Brown
98E-36	SC SM/MM duplex adapter, metal housing	Ceramic Sleeve	Metal
98E-39	FC/APC simplex adapter, D-D, narrow key 2.03~2.08mm	Ceramic Sleeve	Metal
98E-40	SC/APC simplex adapter, Green	Ceramic Sleeve	Green
98E-41	E2000 simplex singlemode PC adapter	Ceramic Sleeve	Blue
98E-42	E2000 simplex singlemode APC adapter	Ceramic Sleeve	Green
98E-43	SC/FC simplex adapter, Rectangular flange	Ceramic Sleeve	Metal
98E-46	SC/PC, SM duplex adapter without flange	Ceramic Sleeve	Blue
98E-47	SC/PC, MM duplex adapter without flange	Ceramic Sleeve	Beige
98E-48	LC/PC, SM simplex adapter	Ceramic Sleeve	Blue
98E-49	LC/PC, MM simplex adapter	Ceramic Sleeve	Beige
98E-50	LC/PC, SM duplex adapter,hole fixing	Ceramic Sleeve	Blue
98E-51	MT-RJ adapter with SC foot print	NA	Black
98E-52	MT-RJ adapter with SC foot print	NA	White
98E-53	FC/PC SM/MM D-D style, Hexagonal flange	Ceramic Sleeve	Metal
98E-54	E-2000/E-2000 SM duplex adapter H	Ceramic Sleeve	Blue
98E-56	MU/MU, MM duplex adapter H	Ceramic Sleeve	Beige
98E-57	MU/MU, SM duplex adapter H	Ceramic Sleeve	Blue
98E-59	SC/PC SM simplex adapter, without flange	Ceramic Sleeve	Blue
98E-60	SC/PC MM simplex adapter, without flange	Ceramic Sleeve	Beige
98E-62	Adapter FC/PC, D-shape, SM/MM	Ceramic Sleeve	Metal
98E-65	SC/PC simplex adapter, SM/MM, metal	Ceramic Sleeve	Metal
98E-71	LC duplex slim MM beige,with shutter	Ceramic Sleeve	Beige
98E-75	LC duplex slim SM blue,with shutter	Ceramic Sleeve	Blue

6 Fiber–To–The–Desk

Increasing bandwidth and security demands in Local Area Networks (LANs) lead to a shift form copper to fiber optic solutions. In future installations, not only the campus and building backbone of a LAN is built up using fiber cabling, but also horizontal cabling section will use Fiber-to-the-Desk (FTTD) cabling solution.

The term Fiber-to-the-desk (FTTD) is used to describe the horizontal cabling in the areas of data transmissions and telecommunication, which links the floor distributor to the outlets at the workplace. FTTD is defined in 3rd part of the standards ISO/IEC 11801 and EN 50173.

Rosenberger *HDCS*® introduces FTTD solutions including Field Installable Connectivity System and fiber optic outlets / faceplates.

HDCS® Crimp-type Fiber Optic Connector

HDCS® crimp fiber optic connectors enable a rapid and easy field termination. Available connectors include conventional ST, FC and SC, as well as Small Form Factor connectors LC and MT-RJ. These connectors contain a pre-polished fiber stub. This product realizes time saving crimping termination, eliminating on-site polishing, epoxying and power supply.

Feature & Benefit

- Avoiding time consuming polishing process
- The termination of the connector can be easily done with the hand-held tools without a power supply on site
- Eliminating conventional gluing process
- Complete installation procedure can be done within a few minutes
- Toolkit bag contains all necessary tools to terminate the connectors on all standard cable types with diameters of 0.9mm and 3.0mm
- Compliant with ANSI/TIA/EIA-568-B.3
- IL: 0.4dB average for SM, FOTP-171
- IL: 0.3dB average for MM, FOTP-171

Fiber-to-the-Desk SC

Fiber-to-the-Desk ST

Fiber-to-the-Desk LC

Fiber-to-the-Desk MT-RJ

Fiber-to-the-Desk Crimping Toolkit

Fiber-to-the-Desk Toolkit

Ordering Information

HDCS® P/N	Description	Unit
98B02-55	Crimp Connector SC, 9/125µm	ea
98B02-56	Crimp Connector SC, 50/125µm	ea
98B02-57	Crimp Connector SC, 62.5/125µm	ea
98B01-57	Crimp Connector ST, 9/125µm	ea
98B01-58	Crimp Connector ST , 50.125µm	ea
98B01-59	Crimp Connector ST, 62.5/125µm	ea
98B06-18	Crimp Connector MT-RJ, 9/125µm, with pin	ea
98B06-19	Crimpconnector MT-RJ,50/125µm,With pin	ea
98B06-20	Crimp connector MT-RJ,62.5/125µm,With pin	ea
98B04-27	Crimp Connector LC, 9/125µm	ea
98B04-28	Crimp ConnectorLC, 50/125µm	ea
98B04-29	Crimp ConnectorLC, 62.5/125µm	ea
98B01-62	Crimp Connector ST, Laser Optimized 50/125µm	ea
98B02-80	Crimp Connector SC, Laser Optimized 50/125µm	ea
98B06-24	Crimp Connector MT-RJ, Laser Optimized 50/125µm	ea
98B04-43	Crimp Connector LC, Laser Optimized 50/125µm	ea

Fiber-To-The-Desk

Optical Fiber Mechanical Splicer

The mechanical optical fiber splicer adopts mature V-groove butting technology. It's applicable for connecting singlemode and multi-mode optical fibers, and easy to operate rapidly. With simple tooling and clamp, it is not only widely applicable for different optical cables, optical fiber splicing for fiber distribution units (FDU) as well as the splicing of the optical drop cables with the pigtails in multimedia boxes in homes, but also applicable for repairing any damaged lines to realize firm and reliable splicing in optical fibers.

Application

- FTTH, FTTB, FTTD and all links of optical access
- Rush repair of optical line
- Optical fiber connected under adverse environment

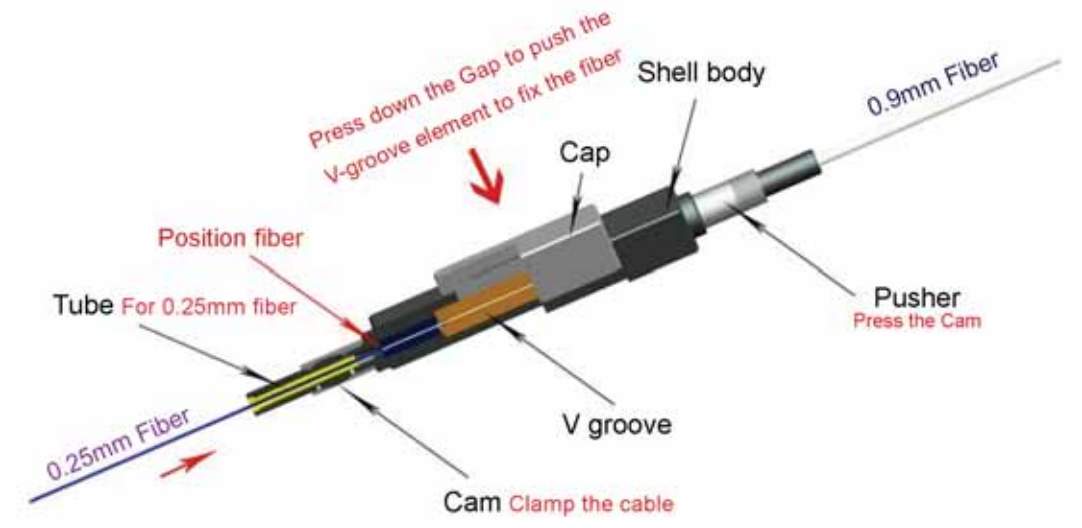
Feature & Benefit

- Base on box-building crimping technology
- Uninterrupted fitting and connecting technology, hence signals are free of impact from external force
- The naked fiber, tight buffer and cable, etc., can fully meet the environmental requirements from the terminals customer
- Integration protected of the casing to withstand harsh outdoor environment
- High success rate and easiness in installation with average splicing time of 150 seconds

Specification

Item	Technical Parameter
Applications	Φ0.25 mm & Φ0.90 mm fiber
Optical Fiber Diameter	125μm
Tight Buffer Diameter	250μm & 900μm
Fiber Mode	singlemode & multimode
Operation Time	about 60s（non-fiber processing time）
Insertion Loss	⩽ 0. 1dB（1310nm & 1550nm）
Return Loss	>40dB
Fastening Strength of Naked Fiber	>5 N
Fastening Strength of Naked Fiber Holder	>8 N
Using Temperature	-40 ～ +75℃
Repeatability（10 times）	△ IL ⩽ 0.2dB, △ RL ⩽ 5dB

Construction



Ordering information

Part Number	Description
MS-CCA	Mechanical Splicer, 250&900µm buffer, SM/MM

Fiber-To-The-Desk

HDCS® Fiber-Optic Outlet

Rosenberger *HDCS*® fiber-optic outlets adpot the horizontal fiber link and provide optical fiber interface for work area computers.

Feature & Benefit

- Flexible installation four types of wall outlets are offered
- Connectivity system ST, SC-duplex, LC-duplex and MT-RJ are supported
- Fit with standard 86x86mm wall back box
- 45 degree angled outlet without coupler/ keystone attached
- Fiber optic adapters or modules available
- Delivered with mounting screws and labeling system

Configuration (Combination of Outlet and Adapter)

The following types of fiber optic keystone are available when use RJ45 compatible angled faceplates:

- LC-duplex singlemode keystone module
- LC-duplex multimode keystone module
- SC-simplex singlemode keystone module
- SC-simplex multimode keystone module
- ST-simplex keystone module
- MT-RJ keystone module

The following types of fiber optic adapter are available when standard fiber optic adapters are installed in the angled faceplate directly

- SC-duplex singlemode adapter
- SC-duplex multimode adapter
- SC/ST-duplex adapter
- ST-simplex adapter

Ordering Information

HDCS® P/N	Description	Pack
Solution 1 - Standard Adapter		
CP21-121-40	FTTD Faceplate, SC-Duplex Adapter Type, Ivory	12pcs/box
CP21-122-20	FTTD Faceplate, 2xST-Simplex Adapter Type, Ivory	12pcs/box
98E-11	SC/SC-Duplex Singlemode Adapter, Blue	100pcs/box
98E-10	SC/SC-Duplex Multimode Adapter, Beige	100pcs/box
98E-04	ST/ST-Simplex Adapter, Metal	100pcs/box
98E-13	SC/ST-Duplex Adapter, Metal	100pcs/box
Solution 2 – Keystone Module		
CP21-121-10	Angled 1-port RJ Faceplate, Ivory	12pcs/box
CP21-122-10	Angled 2-port RJ Faceplate, Ivory	12pcs/box
CP31-363-04	MT-RJ Keystone Module	10pcs/box
CP31-364-04	LC-Duplex Multimode Keystone Module	10pcs/box
CP31-365-04	ST-Simplex Keystone Module	10pcs/box
CP31-366-04	SC-Simplex Singlemode Keystone Module	10pcs/box
CP31-367-04	SC-Simplex Multimode Keystone Module	10pcs/box
CP31-368-04	LC-Duplex Singlemode Keystone Module	10pcs/box

7 *Fiber Optic Patch Panel*

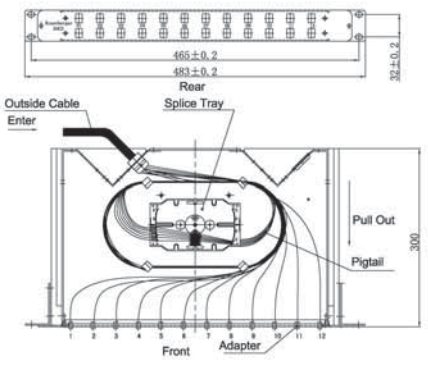
HDCS® patch panels are designed for installation on 19" racks ready to accept all common types of factory or on-site assembled cables, especially for Rosenberger factory assembled **PRECONNECT**® cabling system.

Feature & Benefit

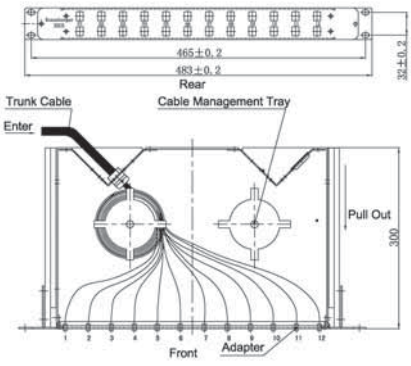
Rosenberger *HDCS*® distribution & splice panel insures the four critical elements of fiber optical cable management: bend radius protection, cable routing paths, cable access and physical protection. All four aspects directly affect the reliability, functionality, and the operational cost of the network.

- 2 major configurations: termination only and termination & splicing
- The panel surface is treated with electro-static spraying
- Silk-screen printing for front plate labeling
- Cable entry 45° angled , smoothly lead in cables from left and right side
- Aluminum or steel material available
- Sliding type and fixed type available
- Standard black color coated and other colors available
- Panel accessories can be ordered separately

Specification



Fixed-type Splicing fiber panel



Sliding-Type Pre- termination fiber panel

Sliding type: 483 x 300 × 1HU (mm) and 483x 300 × 2HU (mm)
Fixed type: 483 x 250 ×1HU (mm) and 483x 250 × 2HU (mm)

Delivery Form

- Panel completely factory assembled
- Dummy plugs in unused cable entries
- Dummy plugs in unused front plate ports
- Adapters mounted for complete panel set
- 4 installation screws and caged-nuts as mounting kit
- Cable gland & guiding clip
- Splice trays included for complete panel set

Ordering Information

HDCS® Fiber Optic Patch Panel, including adapters:

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Patch Panel Type
1: 1 HU Distribution Panel
2: 1 HU Splice Panel
3: 1 HU Sliding Distribution Panel
4: 1 HU Sliding Splice Panel
5: 2 HU Distribution Panel
6: 2 HU Splice Panel
7: 2 HU Sliding Distribution Panel
8: 2 HU Sliding Splice Panel
A: 3 HU Sliding Splice Panel
B: 3 HU Modular Splice Panel
C: 1 HU Modular Distribution Panel
D: 1 HU Modular Splice Panel
E: 1 HU Modular Splice Panel w/ label
F: 2 HU Modular Splice Panel w/ label

Adapter Type
1: SC/SC Simplex SM
2: ST/ST Simplex
3: ST/ST Duplex
4: SC/SC Simplex MM
5: SC/SC Duplex S/M
6: SC/SC Duplex M/M
7: SC/ST Duplex S/M
8: SC/ST Duplex MM
9: ESCON/ST MM
A: MT-RJ/MT-RJ,SM
B: MT-RJ/MT-RJ,MM
C: LC/LC,duplex,SM
D: LC/LC,duplex,MM
E: FC/FC,simplex
G: SC/APC Simplex
H: DIN/DIN
K: E2000/E2000

Fiber Count
1: 0 Fiber
2: 12 Fibers
3: 24 Fibers
4: 48 Fibers
5: 16 Fibers
6: 8 Fibers
7: 32 Fibers
8: 4 Fibers
9: 256 Fibers
A: 288 Fibers
B: 512 Fibers
C: 6 Fibers
D: 36 Fibers
E: 72 Fibers
F: 96 Fibers

Panel Color
0: Metal
2: Grey
3: White
4: Beige
5: Black

Structure Code
1: Aluminum body & front plate
1A: Steel body & front plate

Fiber Optic Patch Panel

HDCS® Fiber Optic Patch Panel, no Adapter Plate or Adapter

Item	PN	Description	Unit
1	1110015-1A	1HU fixed type, no adapter plate, steel, black	SET
2	1110035-1A	1HU sliding type, no adapter plate, steel, black	SET
3	1110025-1A	1HU fixed type, no adapter plate, incl. splice tray and splice protector, steel, black	SET
4	1110045-1A	1HU sliding type, no adapter plate, incl. splice tray and splice protector, steel, black	SET
5	1110065-1A	2HU fixed type, no adapter plate, incl. splice tray and splice protector, steel, black	SET
6	1110085-1A	2HU sliding type, no adapter plate, incl. splice tray and splice protector, steel, black	SET
7	1110055-1A	2HU fixed type, no adapter plate, steel, black	SET
8	1110075-1A	2HU sliding type, no adapter plate, steel, black	SET

HDCS® Empty Front Adapter Plate

Item	PN	Description	Unit
1	11210145-1A	1HU 24-port empty adapter plate, ST-type, steel, black	SET
2	11210245-1A	1HU 24-port empty adapter plate, duplex-SC-type, steel, black	SET
3	11210445-1A	1HU 24-port empty adapter plate, MTRJ-type, steel, black	SET
4	11210345-1A	1HU 24-port empty adapter plate, Duplex-LC-type, steel, black	SET
5	11210455-1A	1HU 48-port empty adapter plate, MTRJ-type, steel, black	SET
6	11210355-1A	1HU 48-port empty adapter plate, Duplex-LC-type, steel, black	SET
7	11220155-1A	2HU 48-port empty adapter plate, ST-type, steel, black	SET
8	11220255-1A	2HU 48-port empty adapter plate, duplex-SC-type, steel, black	SET
9	11220455-1A	2HU 48-port empty adapter plate, MTRJ-type, steel, black	SET
10	11220355-1A	2HU 48-port empty adapter plate, Duplex-LC-type, steel, black	SET

HDCS® Panel Accessory

Item	*HDCS*® PN	Description	Unit
1	111201-1	Splice tray (12-fiber)	EA
2	99P2005	Splice holder (single-fiber)	EA
3	99P2006	Splice holder (ribbon-fiber)	EA
4	99P2007	3.0mm cable protecting tube	EA
5	115101	PG13.5 cable gland	EA
6	115102	PG16 cable gland	EA
7	115103	PG21 cable gland	EA
8	115202	Cable clamping adapter ring (21/16mm)	EA
9	115201	Cable clamping adapter ring (21/13.5mm)	EA
10	116006	Cable guiding clip	EA
11	116003	Duplex-SC blank cover for panel port	EA
12	116002	ST/FC simplex blank cover for panel port	EA
13	116048	MT-RJ/SC-simplex blank cover for panel port	EA
14	116074	Duplex-LC blank cover for panel port	EA

5HU Fiber Optic Patch Panel (Splicing)

HDCS® 5HU fiber optic patch panel is modular designed for installation on 19" racks and ready to accept all on-site assembled cables, especially for high density fiber application.

Feature & Application

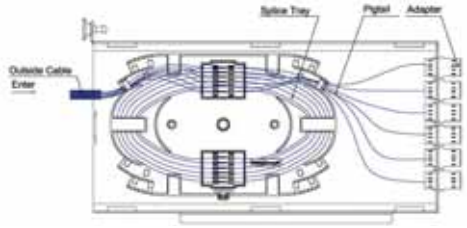
Rosenberger *HDCS*® 5HU fiber optic patch panel is modular designed, it can support up to 288 fiber cores by 12 modules. Each module can support 12 fiber cores by SC-duplex adapter or 24 fiber cores by LC-duplex adapter. It suited for high density application, such as FTTD, FTTH, easy for expansion and maintenance.

- SC-duplex or LC-duplex adapter
- 5HU support up to 12 modules
- Splice tray and adapters are included in modules
- Black powder coating for 5HU patch panel meets ROHS requirement
- The back hinged protection plate of the 5HU patch panel can be quickly opened manually for installing fiber cables
- Aluminum body
- Panel front plate is made of a special plastic material designed for ultimate fiber cable protection and convenient system maintenance
- Build in fiber patch cord management space

Specification

Patch Panel: 483 x 460 x 5HU (mm) Module: 284 x150 × 34.5 (mm)

5HU Patch Panel



Module

Order Informaiton

Item	*HDCS*® PN	Description
1	CPB1-111-11	5HU patch panel (without module)
2	CPB4-711-11	Slot cover
3	CPB2-521-11	LC 24F 9/125μm module (incl. adapter, without pigtail)
4	CPB2-523-11	LC 24F 50/125μm module (incl. adapter, without pigtail)
5	CPB2-524-11	LC 24F OM3 50/125μm module (incl. adapter, without pigtail)
6	CPB2-424-11	LC 24F OM3 50/125μm module (incl. adapter and pigtail)
7	CPB2-711-11	SC 12F 9/125μm module (incl. adapter, without pigtail)
8	CPB2-713-11	SC 12F 50/125μm module (incl. adapter, without pigtail)
9	CPB2-714-11	SC 12F OM3 50/125μm module (incl. adapter, without pigtail)

8 Wall Mount Fiber Distribution Box

Application

Rosenberger *HDCS*® high density and compact size wall mount fiber distribution box provides serve as a fiber distribution terminal for optical cables from equipment room. This product is applicable to all-fiber cabling system or copper & fiber hybrid application.

Feature & Benefit

- Dual-hinged structure for convenient installation and access
- Multiple optional adapter plates, including FC, SC, MTRJ, ST, LC
- Compact design of enclosure, aesthetic appearance, high density
- Support conventional splicing function, or Rosenberger patented **PRECONNECT®** optical cable assembly
- Excellent mechanical performance, impact resistent

Physical Performance

Material

Sheet metal: Cold-rolled steel
Surface finish: Powder painted, 70-120μm
Standard colour: Ivory
RoHS-compliant

Dimension

L315mm X W255mm X H66.5mm

Accessory

1. Splice tray (qty based on customer requirement, 12 fibers per tray)
2. Splice protector (qty depending on number of splice tray)
3. Cable gland: 2Pcs
4. Cable ring: 4Pcs
5. Entry plug: 4Pcs
6. Self-expansion bolt: 4Pcs

Ordering Information

HDCS® PN	Description
CPA2-111-15	6-fiber ST MM Wall-mountable Box with Adapters and Splice Accessories
CPA2-111-11	12-fiber ST MM Wall-mountable Box with Adapters and Splice Accessories
CPA2-111-12	24-fiber ST MM Wall-mountable Box with Adapters and Splice Accessories
CPA1-111-15	6-fiber ST SM Wall-mountable Box with Adapters and Splice Accesssories
CPA1-111-11	12-fiber ST SM Wall-mountable Box with Adapters and Splice Accesssories
CPA1-111-12	24-fiber ST SM Wall-mountable Box with Adapters and Splice Accesssories
CPA2-211-15	6-fiber SC-Duplex MM Wall-mountable Box with Adapters and Splice Accessories
CPA2-211-11	12-fiber SC-Duplex MM Wall-mountable Box with Adapters and Splice Accessories
CPA2-211-12	24-fiber SC-Duplex MM Wall-mountable Box with Adapters and Splice Accessories
CPA1-211-15	6-fiber SC-duplex SM Wall-mountable Box with Adapters and Splice Accessories
CPA1-211-11	12-fiber SC-duplex SM Wall-mountable Box with Adapters and Splice Accessories
CPA1-211-12	24-fiber SC-duplex SM Wall-mountable Box with Adapters and Splice Accessories
CPA1-311-15	6-fiber LC-duplex SM Wall-mountable Box with Adapters and Splice Accessories
CPA1-311-11	12-fiber LC-duplex SM Wall-mountable Box with Adapters and Splice Accessories
CPA1-311-12	24-fiber LC-duplex SM Wall-mountable Box with Adapters and Splice Accessories
CPA2-311-15	6-fiber LC-duplex MM Wall-mountable Box with Adapters and Splice Accessories
CPA2-311-11	12-fiber LC-duplex MM Wall-mountable Box with Adapters and Splice Accessories
CPA2-311-12	24-fiber LC-duplex MM Wall-mountable Box with Adapters and Splice Accessories
CPA1-511-15	6-fiber FC Wall-mountable Box with Adapters and Splice Accesssories
CPA1-511-11	12-fiber FC Wall-mountable Box with Adapters and Splice Accesssories
CPA1-511-12	24-fiber FC Wall-mountable Box with Adapters and Splice Accesssories

9 IP67 Fiber Optic Product

Application

Rosenberger *HDCS*® IP67 fiber Optic cabling total solution including adapter, patch cord/trunk and zone box. Rosenberger can provide different fiber types as SM, OM3, OM4 and different fiber connectors as LC and MTP to apply in different applications. Rosenberger also can provide customer oriented IP67 fiber products based on customer's requirements. Different application solutions are provided according to on-site situations.

Feature & Benefit

- Total solution
- IP 67 protection, water proof, dust proof, oil proof and anti-UV
- Can work under pressure
- A Threaded fitting to connect a fixture on outlet box
- Adopt MTP connector, support point to multi-point connection

Specification

- Insertion loss determined acc. to IEC 61300-3-4
- Return loss determined acc. to IEC 61300-3-6
- 100% performance testing
- Providing test report for 3D geometric characteristics of connector end-face as required

Fiber Type

- 9/125µm, 50/125µm, 62.5/125µm, OM3, OM4 and bend insensitivity fiber

Connector and Coupler

- IP67 LC single mode/multimode connector, IP 67 MTP single mode/multimode connector
- IP67 LC and MTP adapter with flange

Delivery

- Separately packed in plastic bag
- Labeling with serial number

Ordering Information

Patch cord/trunk

SPC-	X ↓ Digit1	X ↓ Digit2	X ↓ Digit3	X ↓ Digit4	X ↓ Digit5	X ↓ Digit6	X ↓ Digit7	XXXX ↓ Digit8
	X	X	X	X	X	X	X	XXXX
	K:IP67 Fiber Products	A: G.652D	1: 1core	0: Null	0: Null	0: Null	M: Meter	cable length XXX.X meter
		B: G.657A	2: 2core	1: UPC-UPC	1: LC	1: LC		
		C: G.657B	4: 4core	2: APC-APC	2: LC IP67	2: LC IP67	F: Feet	Cable length XXX.X feet
		G: 50/125	……	3: UPC-APC	3: MTP	3: MTP		
		H: OM3	A: 10core	4: APC-UPC	4: MTP IP67	4: MTP IP67		
		J: OM4	B: 12core					
		K: OM3 BI						
SPC-		L: OM4 BI						

Adapter

***HDCS*® PN**	**Description**
CP31-36F-04	LC multimode IP67 duplex adapter
CP31-36G-04	LC singlemode IP67 duplex adapter
CP31-36H-04	MTP multimode IP67 adapter
CP31-36J-04	MTP singlemode IP67 adapter

10 Installation Tools & Accessory

HDCS® offers all necessary tools and accessories for on-site fiber optic connector polish termination and quick crimp termination. Tools can be ordered in a package of tool kit form or separately. Tools can be used to install SC, STII, FC, LC, MT-RJ fiber connectors on site either by manual polishing or direct crimp termination.

HDCS® On-site Crimp Tool Kit

HDCS® on-site crimp tool kit is designed with the installer in mind with convenient package in an easy-to-carry ballistic nylon bag,and the tool kit is compact and easy to be carried around the work site.

Feature & Benefit

- Convenient carrying bag
- Full and very detailed instructions included
- Compatible with both singlemode and multimode SC, FC, STII, LC and MT-RJ connectors
- CTS (Continuity Test Set) option reduces scrap rate and helps train non-skilled installers
- All accessories for *HDCS*® crimp connectors are provided in one kit

Ordering Information

Item	Description	Q'ty	*HDCS*®PN	Basic Tool Kit	CTS Tool Kit
1	Basic Installation Tool Kit	1	98K100-17	-	-
2	Installation Tool Kit with CTS	1	98K100-49	-	-
3	Connector Installation Critical Steps Card	1	98K100-50	X	X
4	Connector Installation Recommended Procedures Document	1	98K100-51	X	X
5	Connector Installation Video	1	98K100-52	X	X
6	Connector Strip Length Gauge Card	1	98K100-53	X	X
7	Connector Elite Installation Tool	1	98K100-16	X	X
8	Crimp Tool	1	98K100-24	X	X
9	Score and Snap Fiber Cleaver	1	98K100-23	X	X
10	Fiber Stripper, Miller	1	98K100-54	X	X
11	No-Nik Stripper	1	98K100-55	X	X
12	Jacket Stripper	1	98K100-56	X	X
13	Electrician's Scissors	1	98K100-57	X	X
14	Number Marker	1	98K100-58	X	X
15	Tweezers	1	98K100-59	X	X
16	Alcohol Wipes	6	98K100-60	X	X
17	Permanent Marker	1	98K100-61	X	X
18	Electrician's Tape	1	98K100-62	X	X
19	Loctite 411 Adhesive	1	98K100-63	X	X
20	Black Adhesive Anvil Strips	7	98K100-64	X	X
21	MSDS, 411 Adhesive	1	98K100-65	X	X
22	MSDS, Alcohol Wipes	1	98K100-66	X	X
23	Connector Continuity Test Set	1	98K100-67	-	X
24	Connector Standard Tool Bag	1	98K100-68	X	X

HDCS® On-site Polish Tool Kit

HDCS® on-site polish tool kit is designed for installing the fiber optic connectors at work site by applying manual polishing. The SC, FC and STII connectors can be terminated on 900µm or 2.0mm/3.0mm jacketed fiber cables by using this tool kit together with the *HDCS*® consumable kit.

Feature & Benefit

- Complete termination set up with all tools except loss tester
- Full and very detailed operating instructions included
- Compatible for terminating both singlemode and multimode SC, FC, STII connectors
- Tool kit is compact and also convenient for carrying

Ordering Information

Item	Description	Q'ty	*HDCS*®PN	Tool Kit
1	*HDCS*® On-site Termination Tool Kit	1	98K100-37	
2	Fiber Protector, ST	24	98K100-04	X
3	Fiber Protector, SC	24	98K100-05	X
4	Crimp Tool	1	98K100-10	X
5	PVC Electrical Tape 1712	1	98K100-20	X
6	Hand Microscope Kit	1	98K100-19	X
7	Fiber Scriber	1	98K100-12	X
8	Alcohol Bottle	2	98K100-09	X
9	Hand Polishing Jig	1	98K100-14	X
10	Rubber Pad 480-80	1	98K100-13	X
11	Curing Oven with Thermometer & Powercord	1	98K100-11	X
12	Jacket Stripper	1	98K100-06	X
13	Fiber Stripper	1	98K100-08	X
14	Aramid Yarn Scissor	1	98K100-07	X
15	Tool Kit Suitcase	1	98K100-02	X
16	Termination Instruction	1	98I357	X

Installation Tools & Accessory

HDCS® On-site Polish Consumable Kit

The consumable kit is used for on-site polishing connector installation on 900µm buffered fibers or on 2.0mm/3.0mm jacketed fiber optic cables. It provides all necessary consumables sufficient for terminating at least 100 pieces of FC, SC, STII connectors.

Feature & Benefit

- Polishing films, tex-wipes and epoxies included for on-site connector termination
- Material individually packed & labeled for easy identification
- Sufficient for at least 100 pieces of fiber optic connector termination
- Period of validity of epoxy is 1 year from D.O.M

Ordering Information

Item	Description	Q'ty	HDCS®PN	Tool Kit
1	HDCS® on-site termination consumable kit	1	98K100-38	-
2	Polishing film,15µ,brown, SC	5	98K10322	X
3	Polishing film, 3µ,pink, diamond	5	98K10335	X
4	Polishing film, 1µ,brown, diamond	5	98K10336	X
5	Syringe, 5cc	3	98K10206	X
6	Texwipe Tx604	0.33	98K10402	X
7	EPO-TEK 353ND-4G	3	98K10101	X

ELECTRONICS

11 Rosenberger HDCS® Data Cable

Rosenberger *HDCS*® data cables are designed for structured cabling system. Rosenberger provides data cables for Class C to Class F solutions.

- CAT.3
- CAT.5
- CAT.5e
- CAT.6
- CAT.7

CAT.7 STP Data Cable

Application

HDCS® CAT.7 data cable for structured premise cabling transmits of voice, data and video signals. It supports current high-bandwidth applications, especially suitable to Class F Solution.

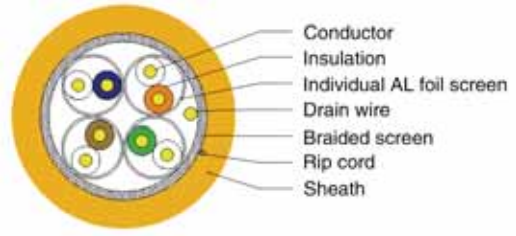
- VoIP
- ISDN
- Token ring
- 100 Mbps TP-PMD
- analog and digital video
- TR-16 Active and Passive
- 155 Mbit /622Mbit /1.2 Gbit ATM
- 10Base-T/100Base-TX Fast /1000Base-T/TX Gigabit Ethernet/ 10GBase-T Ethernet

Feature & Benefit

Rosenberger CAT.7 cables are designed for shielded cabling system. Rosenberger HDCS CAT.7 cables exceed ISO/IEC11801 2nd and IEC61156-5 requirements for CAT.7 performance by significant margins on all parameters tested up to 600MHz. Especially the STP screened structure provides excellent screen effect and magnificent EMI performance.

Specification

Cable Construction



Construction:	4×2×AWG23
Conductor:	AWG 23 solid copper
Insulation:	HDPE
Core:	4 individual screened twist pairs
Screen:	braid of tinned copper wire
Drain Wire:	AWG23 tinned copper
Sheath:	LSZH or PVC
Color:	Orange or Grey
Nominal Diameter:	8.5mm

High Frequency Performance at 20℃

Frequency (MHz)	Attenuation (dB/100m)	NEXT (dB)	RL (dB)	PSNEXT (dB)	ELFEXT (dB)	PSELFEXT (dB)	ACR (dB)	Propagation Delay (ns/100m)
	Max.	Min.	Min.	Min.	Min.	Min.	Min.	Max.
1.0	2.0	75	20.0	78	78	75	73.0	570.0
4.0	3.7	75	23.0	78	78	75	71.3	552.0
10.0	5.9	75	25.0	78	74	71	69.1	545.4
16.0	7.4	75	25.0	78	70	67	67.6	543.0
20.0	8.3	75	25.0	78	68	65	66.7	542.0
31.25	10.4	75	23.6	78	64	61	64.6	540.4
62.5	14.9	72	21.5	75	58	55	57.1	538.6
100.0	19.0	69	20.1	72	54	51	50.0	537.6
125	21.4	68	19.4	71	52	49	46.6	537.2
200	27.5	65	18.0	68	48	45	37.5	536.5
250	31.0	63	17.3	66	46	43	32.0	536.3
300	34.2	62	17.3	65	44	41	27.8	536.1
600	50.1	58	17.3	61	38	35	7.9	535.5

Electrical Performance at 20℃

DC Resistance	≤7.5 Ohm/100m
Unbalanced Resistance	≤2%
Unbalance Capacitance	≤1600pF/km
Screen Attenuation	≥60dB（30-600MHz）
Dielectric Strength	DC 1kv,1min no fail
Insulation Resistance	≥5000MΩ.km
Impedance	4-100MHz (100±15) ohm
	100-250MHz (100±22) ohm
	250-600MHz (100±25) ohm
Delay Skew	≤25ns/100m（4-600MHz

Ordering Information

Order Number	Description
CP11-451-12	CAT.7 STP indoor cable, 4P, CM, 305m
CP11-451-13	CAT.7 STP indoor cable, 4P, LSZH, 305m
CP11-451-14	CAT.7 STP indoor cable, 4P, CMR, 305m
CP11-451-16	CAT.7 STP indoor cable, 4P, CMP, 305m

Rosenberger *HDCS*® Data Cable

CAT.6A UTP Data Cable

Application

CAT.6A data cable for structured premise cabling transmits voice, data and video signals. It supports current high-bandwidth applications, especially suitable for application of Fast-Ethernet.

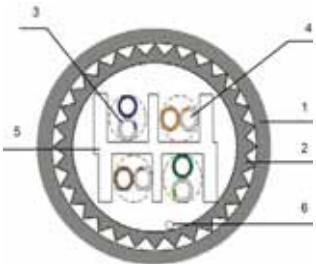
- VoIP
- ISDN
- Token ring
- 100 Mbps TP-PMD
- analog and digital video
- TR-16 Active and Passive
- 155 Mbps /622Mbit /1.2 Gbps ATM
- 10Base-T/100Base-TX Fast /1000Base-T/TX Gigabit Ethernet/10GBase-T Ethernet

Feature & Benefit

Rosenberger indoor and outdoor CAT.6A UTP cables are designed for unshielded cabling system. Rosenberger *HDCS*® CAT.6A cables exceed requirements of TIA-568-C.2 and ISO/IEC11801-2nd-Edition with significant margins on all parameters. It is available with different jacket material of various flame-retardant levels.

Specification

Cable Construction



1, Outer Jacket
2, Inner Jacket
3, Insulation
4, Conductor
5, Filler
6, Rip cor

Construction:	4×2×AWG23
Conductor:	AWG 23 solid copper
Insulation:	HDPE
Core:	4 twist pairs
Sheath:	PVC, LSZH or PE
Color:	Grey, Purple, and Black
Nominal Diameter:	7.8*9.5 mm

Mechanical Performance at 20℃

Bending Radius	
During Installation (min.)	8×outer diameter
Installed (min.)	4×outer diameter
Temperature Range	
During Installation	0℃ to +50℃
Installed	-20℃ to +60℃

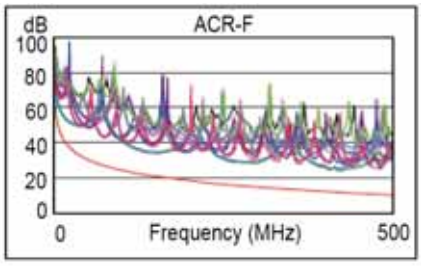
Electrical Performance at 20℃

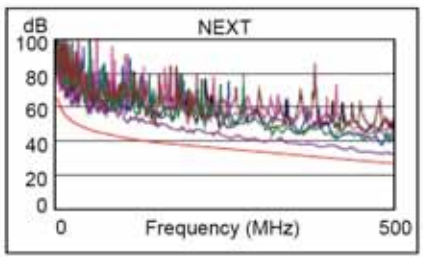
DC Resistance	≤7.5 Ohm/100m
Unbalanced Resistance	≤5%
Unbalance Capacitance	≤330pF/100m
Capacitance	≤5.6nF/100m
Dielectric Strength	DC 1kv (3s No Fail)
Insulation Resistance	≥5000Mohm.Km
Impedance	1~125MHz (100±15) Ohm
	125~250MHz (100±22) Ohm
	250~500MHz (100±25) Ohm
Delay skew	≤45ns

High Frequency Performance at 20℃

Frequency (MHz)	Attenuation (dB/100m)	NEXT (dB)	RL (dB)	PSNEXT (dB)	ELFEXT (dB)	PSELFEXT (dB)	ACR (dB)	Propagation Delay (ns/100m)
	Max.	Min.	Min.	Min.	Min.	Min.	Min.	Max.
1.0	2.1	74.3	20.0	72.3	67.8	64.8	67.0	570
4.0	3.8	65.3	23.0	63.3	55.8	52.8	67.0	552
8.0	5.3	60.8	24.5	58.8	49.7	46.7	67.0	547
10.0	5.9	59.3	25.0	57.3	47.8	44.8	67.0	545
16.0	7.5	56.2	25.0	54.2	43.7	40.7	67.0	543
20.0	8.4	54.8	25.0	52.8	41.8	38.8	67.0	542
25.0	9.4	53.3	24.3	51.3	39.8	36.8	67.0	541
31.25	10.5	51.9	23.6	49.9	37.9	34.9	67.0	540
62.5	15.0	47.4	21.5	45.4	31.9	28.9	65.6	539
100.0	19.1	44.3	20.1	42.3	27.8	24.8	62.5	538
200	27.6	39.8	18.0	37.8	21.8	18.8	58.0	537
250	31.1	38.3	17.3	36.3	19.8	16.8	56.5	536
300	34.3	37.1	16.8	35.1	18.3	15.3	55.3	536
400	40.1	35.3	15.9	33.3	15.8	12.8	53.5	536
500	45.3	33.8	15.2	31.8	13.8	10.8	52.0	536

Characteristic Graph





Ordering Information

Order Number	Description
CP12-171-11	CAT.6A outdoor UTP cable, PE, 305m
CP11-171-12	CAT.6A indoor UTP cable, CM, 305m
CP11-171-13	CAT.6A indoor UTP cable, LSZH, 305m
CP11-171-14	CAT.6A indoor UTP cable, CMR, 305m
CP11-171-16	CAT.6A indoor UTP cable, CMP, 305m

Rosenberger *HDCS*® Data Cable

CAT.6A FTP Data Cable

Application

CAT.6A data cable for structured premise cabling transmits of voice, data and video signals. They support current high-bandwidth applications, especially suitable to shielded Class E_A Solution.

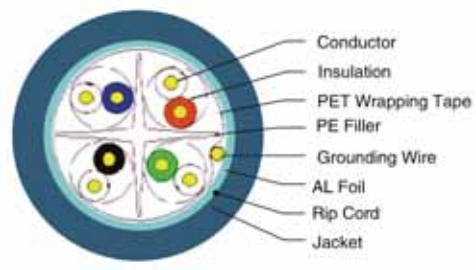
- VoIP
- ISDN
- Token ring
- 100 Mbps TP-PMD
- analog and digital video
- TR-16 Active and Passive
- 155 Mbps /622Mbit /1.2Gbps ATM
- 10Base-T/100Base-TX Fast /1000Base-T/TX Gigabit Ethernet/10GBase-T Ethernet

Feature & Benefit

Rosenberger indoor and outdoor CAT.6A FTP cables are designed for shielded cabling system. Rosenberger *HDCS*® CAT.6A cables exceed TIA-568-C.2 and ISO/IEC11801 2nd requirements for CAT.6A performance by significant margins on all parameters. It is available in different jacket material for various flame-retardant levels..

Specification

Cable Construction



Construction:	4×2×AWG23
Conductor:	AWG 23 solid copper
Insulation:	HDPE
Core:	4 twist pairs
Foil:	PET tape
Screen:	AL/PET tape
Drain Wire:	AWG23 tinned copper
(Lay longitudinally under the AL/PET tape)	
Sheath:	PVC, LSZH or PE
Colour:	Grey, Orange, and Black
Nominal Diameter:	7.4 mm

Mechanical Performance at 20℃

Bending Radius	
During Installation (min.)	8×outer diameter
Installed (min.)	4×outer diameter
Temperature Range	
During Installation	0℃ to +50℃
Installed	-20℃ to +60℃

Electrical Performance at 20℃

DC Resistance	≤7.5 Ohm/100m
Unbalanced Resistance	≤5%
Unbalance Capacitance	≤330pF/100m
Capacitance	≤5.6nF/100m
Dielectric Strength	DC 1kv,3s No Fail
Insulation Resistance	≥5000MΩ.km
Impedance	(100±15) Ohm
Delay Skew	≤45 ns

High Frequency Performance at 20℃

Frequency (MHz)	Attenuation (dB/100m)	NEXT (dB)	RL (dB)	PSNEXT (dB)	ELFEXT (dB)	PSELFEXT (dB)	ACR (dB)	Propagation Delay (ns/100m)
	Max.	Min.	Min.	Min.	Min.	Min.	Min.	Max.
1.0	2.1	74.3	20.0	72.3	67.8	64.8	67.0	570
4.0	3.8	65.3	23.0	63.3	55.8	52.8	67.0	552
8.0	5.3	60.8	24.5	58.8	49.7	46.7	67.0	547
10.0	5.9	59.3	25.0	57.3	47.8	44.8	67.0	545
16.0	7.5	56.2	25.0	54.2	43.7	40.7	67.0	543
20.0	8.4	54.8	25.0	52.8	41.8	38.8	67.0	542
25.0	9.4	53.3	24.3	51.3	39.8	36.8	67.0	541
31.25	10.5	51.9	23.6	49.9	37.9	34.9	67.0	540
62.5	15.0	47.4	21.5	45.4	31.9	28.9	65.6	539
100.0	19.1	44.3	20.1	42.3	27.8	24.8	62.5	538
200	27.6	39.8	18.0	37.8	21.8	18.8	58.0	537
250	31.1	38.3	17.3	36.3	19.8	16.8	56.5	536
300	34.3	37.1	16.8	35.1	18.3	15.3	55.3	536
400	40.1	35.3	15.9	33.3	15.8	12.8	53.5	536
500	45.3	33.8	15.2	31.8	13.8	10.8	52.0	536

Ordering Information

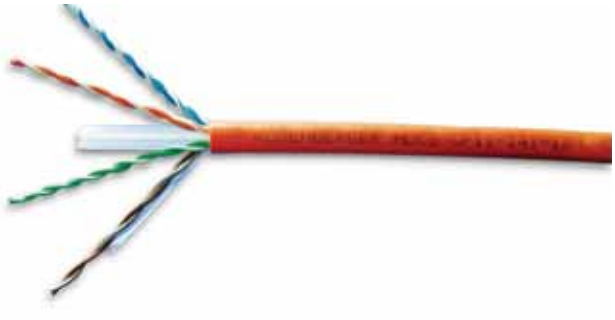
Order Number	Description
CP12-271-11	CAT.6A outdoor FTP cable, PE, 305m
CP11-271-12	CAT.6A indoor FTP cable, CM, 305m
CP11-271-13	CAT.6A indoor FTP cable, LSZH, 305m
CP11-271-14	CAT.6A indoor FTP cable, CMR, 305m
CP11-271-16	CAT.6A indoor FTP cable, CMP, 305m

Rosenberger *HDCS*® Data Cable

CAT.6 UTP Data Cable

Application

CAT.6 data cable for structured premise cabling transmits voice, data and video signals. It supports current high-bandwidth applications, especially suitable for application of Fast-Ethernet.



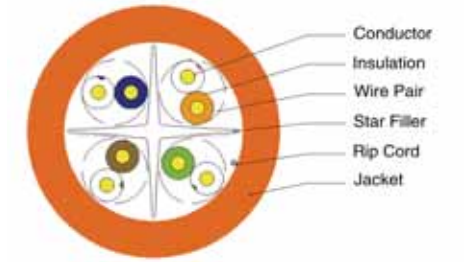
- VoIP
- ISDN
- Token ring
- 100 Mbps TP-PMD
- analog and digital video
- TR-16 Active and Passive
- 155 Mbps /622Mbit /1.2 Gbps ATM
- 10Base-T/100Base-TX Fast /1000Base-T/TX Gigabit Ethernet

Feature & Benefit

Rosenberger indoor and outdoor CAT.6 UTP cables are designed for unshielded cabling system. Rosenberger *HDCS*® CAT.6 cables exceed requirements of TIA-568-C.2 and ISO/IEC11801-2nd-Edition with significant margins on all parameters. It is available with different jacket material of various flame-retardant levels.

Specification

Cable Construction



Construction:	4×2×AWG23
Conductor:	AWG 23 solid copper
Insulation:	HDPE
Core:	4 twist pairs
Sheath:	PVC, LSZH or PE
Color:	Grey, Orange, and Black
Nominal Diameter:	6.3 mm

Electrical Performance at 20℃

Bending Radius	
During Installation (min.)	8×outer diameter
Installed (min.)	4×outer diameter
Temperature Range	
During Installation	0℃ to +50℃
Installed	-20℃ to +60℃

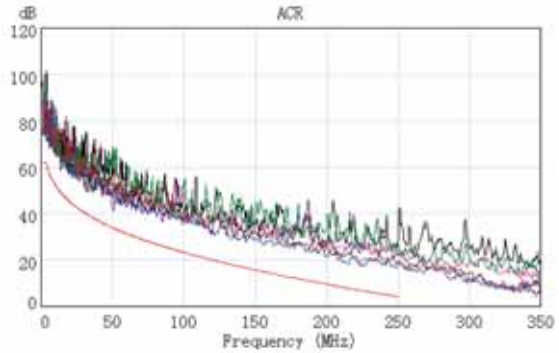
Mechanical Performance at 20℃

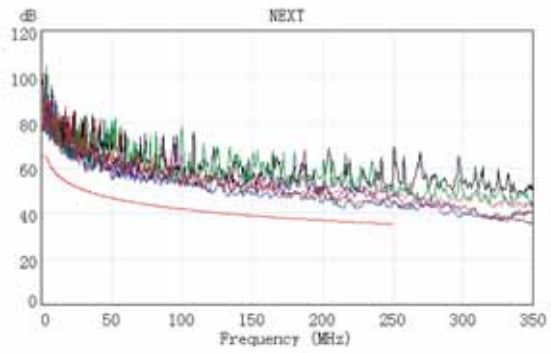
DC Resistance	≤7.5 Ohm/100m
Unbalanced Resistance	≤5%
Unbalance Capacitance	≤330pF/100m
Capacitance	≤5.6nF/100m
Dielectric Strength	DC 1kv (3s No Fail)
Insulation Resistance	≥5000Mohm.Km
Impedance	1-250MHZ (100±15) Ohm
	250-600MHZ (100±25) Ohm
Delay Skew	≤45ns

High Frequency Performance at 20℃

Frequency (MHz)	Attenuation (dB/100m)	NEXT (dB)	RL (dB)	PSNEXT (dB)	ELFEXT (dB)	PSELFEXT (dB)	ACR (dB)	Propagation Delay (ns/100m)
	Max.	Min.	Min.	Min.	Min.	Min.	Min.	Max.
1.0	2.0	74.3	20.0	72.3	67.8	64.8	72	570.0
4.0	3.8	65.3	23.0	63.3	55.8	52.8	61	552.0
8.0	5.3	60.8	24.5	58.8	49.7	46.7	55	546.7
10.0	6.0	59.3	25.0	57.3	47.8	44.8	53	545.4
16.0	7.6	56.2	25.0	54.2	43.7	40.7	49	543.0
20.0	8.5	54.8	25.0	52.8	41.8	38.8	46	542.0
25.0	9.5	53.3	24.3	51.3	39.8	36.8	44	541.2
31.25	10.7	51.9	23.6	49.9	37.9	34.9	41	540.4
62.5	15.4	47.4	21.5	45.4	31.9	28.9	32	538.6
100.0	19.8	44.3	20.1	42.3	27.8	24.8	25	537.6
150	24.7	41.7	18.9	39.7	24.3	21.3	16.9	536.9
200	29.0	39.8	18.0	37.8	21.8	18.8	10.8	536.5
250	32.8	38.3	17.3	36.3	19.8	16.8	5.5	536.3
300	35.0	37.5	17.0	35.5	19.2	15.5	2.5	536.1
600	53.1	33.0	15.0	32.5	11.0	9.5	-20	535.5

Characteristic Graph





Ordering Information

Order Number	Description
CP12-141-11	CAT.6 outdoor UTP cable, PE, 305m
CP11-141-12	CAT.6 indoor UTP cable, CM, 305m
CP11-141-13	CAT.6 indoor UTP cable, LSZH, 305m
CP11-141-14	CAT.6 indoor UTP cable, CMR, 305m
CP11-141-16	CAT.6 indoor UTP cable, CMP, 305m

Rosenberger *HDCS*® Data Cable

CAT.6 FTP Data Cable

Application

CAT.6 data cable for structured premise cabling transmits of voice, data and video signals. It supports current high-bandwidth applications, especially suitable to shielded Class E Solution.

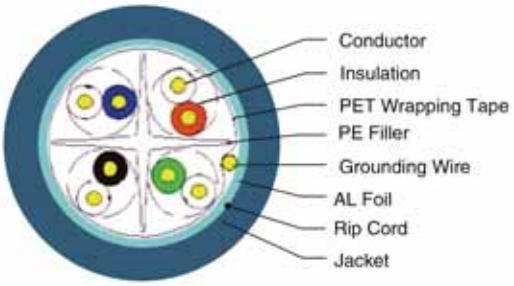
- VoIP
- ISDN
- Token ring
- 100 Mbps TP-PMD
- analog and digital video
- TR-16 Active and Passive
- 155 Mbps /622Mbit /1.2Gbps ATM
- 10Base-T/100Base-TX Fast /1000Base-T/TX Gigabit Ethernet

Feature & Benefit

Rosenberger indoor and outdoor CAT.6 FTP cables are designed for shielded cabling system. Rosenberger *HDCS*® CAT.6 cables exceed TIA-568-C.2 and ISO/IEC11801 2nd requirements for CAT.6 performance by significant margins on all parameters. It is available in different jacket material for various flame-retardant levels.

Specification

Cable Construction



Construction:	4×2×AWG23
Conductor:	AWG 23 solid copper
Insulation:	HDPE
Core:	4 twist pairs
Foil:	PET tape
Screen:	AL/PET tape
Drain Wire:	AWG23 tinned copper
(Lay longitudinally under the AL/PET tape)	
Sheath:	PVC, LSZH or PE
Colour:	Grey, Orange, and Black
Nominal Diameter:	7.4 mm

Mechanical Performance at 20℃

Bending Radius	
During Installation (min.)	8×outer diameter
Installed (min.)	4×outer diameter
Temperature Range	
During Installation	0℃ to +50℃
Installed	-20℃ to +60℃

Electrical Performance at 20℃

DC Resistance	≤7.5 Ohm/100m
Unbalanced Resistance	≤5%
Unbalance Capacitance	≤330pF/100m
Capacitance	≤5.6nF/100m
Dielectric Strength	DC 1kv (3s no fail)
Insulation Resistance	≥5000MΩ.km
Impedance	(100±15) Ohm
Delay Skew	≤45 ns

High Frequency Performance at 20℃

Frequency (MHz)	Attenuation (dB/100m)	NEXT (dB)	RL (dB)	PSNEXT (dB)	ELFEXT (dB)	PSELFEXT (dB)	ACR (dB)	Propagation Delay (ns/100m)
	Max.	Min.	Min.	Min.	Min.	Min.	Min.	Max.
1.0	2.0	74.3	20.0	72.3	67.8	64.8	72	570.0
4.0	3.8	65.3	23.0	63.3	55.8	52.8	61	552.0
8.0	5.3	60.8	24.5	58.8	49.7	46.7	55	546.7
10.0	6.0	59.3	25.0	57.3	47.8	44.8	53	545.4
16.0	7.6	56.2	25.0	54.2	43.7	40.7	49	543.0
20.0	8.5	54.8	25.0	52.8	41.8	38.8	46	542.0
25.0	9.5	53.3	24.3	51.3	39.8	36.8	44	541.2
31.25	10.7	51.9	23.6	49.9	37.9	34.9	41	540.4
62.5	15.4	47.4	21.5	45.4	31.9	28.9	32	538.6
100.0	19.8	44.3	20.1	42.3	27.8	24.8	25	537.6
150	24.7	41.7	18.9	39.7	24.3	21.3	16.9	536.9
200	29.0	39.8	18.0	37.8	21.8	18.8	10.8	536.5
250	32.8	38.3	17.3	36.3	19.8	16.8	5.5	536.3
300	35.0	37.5	17.0	35.5	19.2	15.5	2.5	536.1
600	53.1	33.0	15.0	32.5	11.0	9.5	-20	535.5

Ordering Information

Order Number	Description
CP12-241-11	CAT.6 outdoor FTP cable, PE, 305m
CP11-241-12	CAT.6 indoor FTP cable, CM, 305m
CP11-241-13	CAT.6 indoor FTP cable, LSZH, 305m
CP11-241-14	CAT.6 indoor FTP cable, CMR, 305m
CP11-241-16	CAT.6 indoor FTP cable, CMP, 305m

Rosenberger *HDCS*® Data Cable

CAT.5e UTP Data Cable

Application

HDCS® CAT.5e data cable is applied for structured premise cabling system transmitting voice, data and video signals. Such cable supports current high-bandwidth applications, especially suitable to Class D Solution.

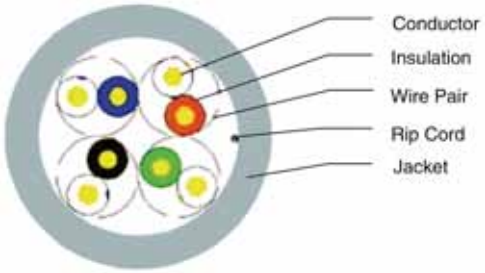
- VoIP
- ISDN
- Token ring
- 100 Mbps TP-PMD
- 155 Mbps /622Mbps ATM
- analog and digital video
- TR-16 Active and Passive
- 10Base-T/100Base-TX Fast Ethernet/1000Base-T

Feature & Benefit

Rosenberger indoor and outdoor CAT.5e UTP cables are designed for unshielded cabling system. Rosenberger *HDCS*® CAT.5e cables exceed requirements of TIA-568-C.2 and ISO/IEC11801-2nd-Edition with significant margins on all parameters. It is available with different jacket material of various flame-retardant levels.

Specification

Cable Construction



Number of Pairs:	4
Conductor:	24 AWG solid copper
Insulation:	HDPE
Core:	4 twist pairs
Sheath:	PVC, LSZH or PE
Jacket Color:	Grey, Orange, or Black
Nominal Diameter:	5.1 mm

Mechanical Performance at 20℃

Bending Radius	
During Installation (min.)	8×outer diameter
Installed (min.)	4×outer diameter
Temperature Range	
During Installation	0℃ to +50℃
Installed	-20℃ to +60℃

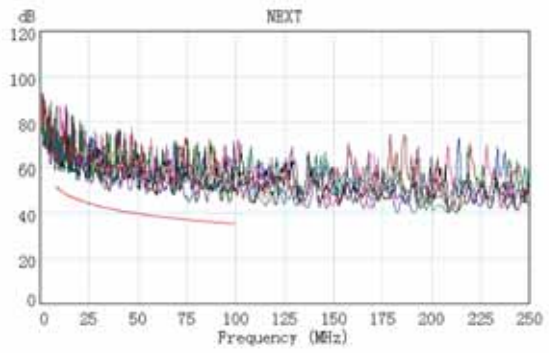
Electrical Performance at 20℃

DC Resistance	≤9.38 Ohm/100m
Unbalanced Resistance	≤5%
Unbalance Capacitance	≤330pF/100m
Capacitance	≤5.4nF/100m
Dielectric Strength	DC 1kv (3s no fail)
Insulation Resistance	≥5000M.Ohm.Km
Impedance	1-250MHZ (100±15) Ohm
Delay Skew	≤45ns

High Frequency Performance at 20℃

Frequency (MHz)	Attenuation (dB/100m)	NEXT (dB)	RL (dB)	PSNEXT (dB)	ELFEXT (dB)	PSELFEXT (dB)	ACR (dB)	Propagation Delay (ns/100m)
	Max.	Min.	Min.	Min.	Min.	Min.	Min.	Max.
0.772	1.8	67.0	19.4	64.0	66.0	63.0	69	575.0
1.0	2.0	65.3	20.0	62.3	63.8	60.8	67	570.0
4.0	4.1	56.3	23.0	53.3	51.7	48.7	56	552.0
8.0	5.8	51.8	24.5	48.8	45.7	42.7	50	546.7
10.0	6.5	50.3	25.0	47.3	43.8	40.8	48	545.4
16.0	8.2	47.3	25.0	44.3	39.7	36.7	43	543.0
20.0	9.3	45.8	25.0	42.8	37.7	34.7	41	542.0
25.0	10.4	44.3	24.3	41.3	35.8	32.8	38	541.2
31.25	11.8	42.9	23.6	39.9	33.9	30.9	35	540.4
62.5	17.1	38.4	21.5	35.4	27.8	24.8	25	538.6
100.0	22.0	35.3	20.1	32.3	23.8	20.8	17	537.6
155.0	26.4	33.8	15.1	30.2	21.2	20.1	N/A	535.3
200.0	31.6	30.8	14.4	28.3	19.7	19.5	N/A	533.4
250.0	35.9	29.3	14.4	26.7	18.6	18.3	N/A	532.0

*At least 6 dB NEXT headroom above CAT.5e standard



Ordering Information

Order Number	Description
CP12-131-11	CAT.5e outdoor UTP cable, PE, 305m
CP11-131-12	CAT.5e indoor UTP cable, CM, 305m
CP11-131-13	CAT.5e indoor UTP cable, LSZH, 305m
CP11-131-14	CAT.5e indoor UTP cable, CMR, 305m
CP11-131-16	CAT.5e indoor UTP cable, CMP, 305m

Rosenberger *HDCS*® Data Cable

CAT.5e FTP/SFTP Data Cable

Application

HDCS® CAT.5e FTP/SFTP data cable is applied for structured premise cabling system transmitting voice, data and video signals. Such cable supports current high-bandwidth applications, especially suitable to Class D Solution.

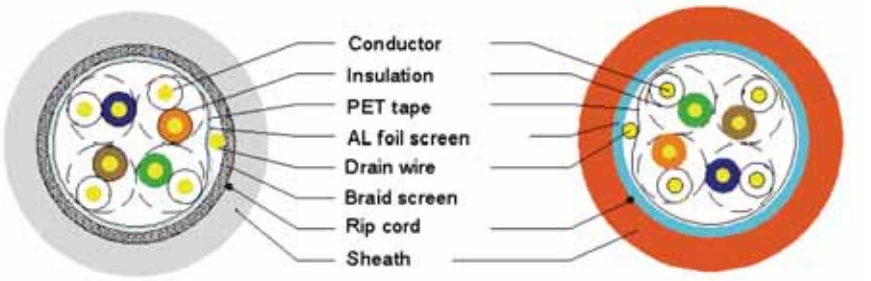
- VoIP
- ISDN
- Token ring
- 100 Mbps TP-PMD
- 155 Mbps /622Mbps ATM
- Analog and digital video
- TR-16 Active and Passive
- 10Base-T/100Base-TX Fast Ethernet/1000Base-T

Feature & Benefit

Rosenberger indoor and outdoor CAT.5e FTP/SFTP cables are designed for shielded cabling system. Especially the SFTP cable screened with foil and copper braid provides excellent screen effect. Rosenberger *HDCS*® CAT.5e cables exceed TIA-568-C.2 and ISO/IEC11801 2nd requirements for CAT.5e performance by significant margins on all parameters and EMI performance. It is available in different jacket material for various flame-retardant levels.

Specification

Cable Construction



Construction:	4×2×AWG24	SFTP Screen:	Braided screen + AL/PET tape
Conductor:	AWG 24 solid copper	Sheath:	PVC, LSZH or PE
Insulation:	HDPE	Color:	Grey, Orange, or Black
Core:	4 twist pairs	Nominal Diameter:	6.6 (SFTP) /6.3 (FTP) mm
FTP screen:	AL/PET tape		

Mechanical Performance at 20℃

Bending Radius	
During Installation (min.)	8×outer diameter
Installed (min.)	4×outer diameter
Temperature Range	
During Installation	0℃ to +50℃
Installed	-20℃ to +60℃

Electrical Performance at 20℃

DC Resistance	≤9.38 Ohm/100m
Unbalanced Resistance	≤2.5%
Unbalance Capacitance	≤330pF/100m
Capacitance	≤5.4nF/100m
Dielectric Strength	DC 1kv, 3s No Fail
Insulation Resistance	≥5000MΩ.km
Impedance	(100±15) Ohm
Delay Skew	≤45ns

High Frequency Performance at 20℃

Frequency (MHz)	Attenuation (dB/100m)	NEXT (dB)	RL (dB)	PSNEXT (dB)	ELFEXT (dB)	PSELFEXT (dB)	ACR (dB)	Propagation Delay (ns/100m)
	Max.	Min.	Min.	Min.	Min.	Min.	Min.	Max.
0.772	1.8	67.0	19.4	64.0	66.0	63.0	69	575.0
1.0	2.0	65.3	20.0	62.3	63.8	60.8	67	570.0
4.0	4.1	56.3	23.0	53.3	51.7	48.7	56	552.0
8.0	5.8	51.8	24.5	48.8	45.7	42.7	50	546.7
10.0	6.5	50.3	25.0	47.3	43.8	40.8	48	545.4
16.0	8.2	47.3	25.0	44.3	39.7	36.7	43	543.0
20.0	9.3	45.8	25.0	42.8	37.7	34.7	41	542.0
25.0	10.4	44.3	24.3	41.3	35.8	32.8	38	541.2
31.25	11.8	42.9	23.6	39.9	33.9	30.9	35	540.4
62.5	17.1	38.4	21.5	35.4	27.8	24.8	25	538.6
100.0	22.0	35.3	20.1	32.3	23.8	20.8	17	537.6
155.0	26.4	33.8	15.1	30.2	21.2	20.1	N/A	535.3
200.0	31.6	30.8	14.4	28.3	19.7	19.5	N/A	533.4
250.0	35.9	29.3	14.4	26.7	18.6	18.3	N/A	532.0

Ordering Information

Order Number	Description
CP12-231-11	CAT.5e outdoor FTP cable, PE, 305m
CP11-231-12	CAT.5e indoor FTP cable, CM, 305m
CP11-231-13	CAT.5e indoor FTP cable, LSZH, 305m
CP11-231-14	CAT.5e indoor FTP cable, CMR, 305m
CP11-231-16	CAT.5e indoor FTP cable, CMP, 305m
CP12-331-11	CAT.5e outdoor S/FTP cable, PE, 305m
CP11-331-12	CAT.5e indoor S/FTP cable, CM, 305m
CP11-331-13	CAT.5e indoor S/FTP cable, LSZH, 305m
CP11-331-14	CAT.5e indoor S/FTP cable, CMR, 305m
CP11-331-16	CAT.5e indoor S/FTP cable, CMP, 305m

Rosenberger *HDCS*® Data Cable

CAT.5e 25P UTP Data Cable

Application

HDCS® CAT.5e data cable is applied for structured premise cabling system transmitting voice and data signals. Such cable supports current high-bandwidth applications, especially suitable to Class D Solution.

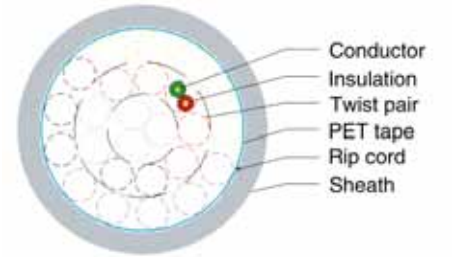
- VoIP
- ISDN
- Token ring
- 100 Mbps TP-PMD
- analog and digital video
- 155 Mbps /622Mbps ATM
- TR-16 Active and Passive
- 10Base-T/100Base-TX Fast Ethernet

Feature & Benefit

Rosenberger CAT.5e 25P UTP cable is designed for highly integrated cabling system. Rosenberger *HDCS*® CAT.5e cables exceed requirements for CAT.5e performance with significant margins on all parameters defined in TIA-568-C.2 and ISO/IEC11801 2nd edition. It is available using different jacket material of different flame-retardant levels

Specification

Cable Construction



Conductor:	AWG 24 solid copper
Construction:	25 x 2 x AWG24
Insulation:	HDPE
Rip Cord:	Nylon
Lay Length:	Different twist pair with differen lay length
Sheath:	PVC, LSZH or PE
Color:	Grey, or Black
Diameter:	max.14.5mm

Color Map

No	Map	No	Map
1	Blue-White/Blue	14	Brown-Black/Brown
2	Orange-White/Orange	15	Grey-Black/Grey
3	Green-White/Green	**16**	Blue-Yellow/Blue
4	Brown-White/Brown	17	Orange-Yellow/Orange
5	Grey-White/Grey	18	Green-Yellow/Green
6	Blue-Red/Blue	19	Brown-Yellow/Brown
7	Orange-Red/Orange	20	Grey-Yellow/Grey
8	Green-Red/Green	**21**	Blue-Purple/Blue
9	Brown-Red/Brown	22	Orange-Purple/Orange
10	Grey-Red/Grey	23	Green-Purple/Green
11	Blue-Black/Blue	24	Brown-Purple/Brown
12	Orange-Black/Orange	25	Grey-Purple/Grey
13	Green-Black/Green		

Electrical Performance at 20℃

Frequency (MHz)	Attenuation (dB/100m)	NEXT (dB)	RL (dB)	PSNEXT (dB)	ELFEXT (dB)	PSELFEXT (dB)	ACR (dB)	Propagation Delay (ns/100m)
	Max.	Min.	Min.	Min.	Min.	Min.	Min.	Max.
0.772	1.8	67.0	19.4	64.0	66.0	63.0	65	575.0
1.0	2.0	65.3	20.0	62.3	63.8	60.8	63	570.0
4.0	4.1	56.3	23.0	53.3	51.7	48.7	52	552.0
8.0	5.8	51.8	24.5	48.8	45.7	42.7	46	546.7
10.0	6.5	50.3	25.0	47.3	43.8	40.8	44	545.4
16.0	8.2	47.3	25.0	44.3	39.7	36.7	49	543.0
20.0	9.3	45.8	25.0	42.8	37.7	34.7	37	542.0
25.0	10.4	44.3	24.3	41.3	35.8	32.8	34	541.2
31.25	11.7	42.9	23.6	39.9	33.9	30.9	31	540.4
62.5	17.0	38.4	21.5	35.4	27.8	24.8	21	538.6
100.0	22.0	35.3	20.1	32.3	23.8	20.8	13	537.6

Ordering Information

Order Number	Description
CP11-132-12	CAT.5e indoor 25P UTP cable, CM, 305m
CP11-132-13	CAT.5e indoor 25P UTP cable, LSZH, 305m
CP11-132-14	CAT.5e indoor 25P UTP cable, CMR, 305m
CP11-132-16	CAT.5e indoor 25P UTP cable, CMP, 305m
CP11-132-22	CAT.5e indoor 25P UTP cable, CM, 500m
CP11-132-23	CAT.5e indoor 25P UTP cable, LSZH, 500m
CP11-132-24	CAT.5e indoor 25P UTP cable, CMR, 500m
CP11-132-26	CAT.5e indoor 25P UTP cable, CMP, 500m

Rosenberger *HDCS*® Data Cable

CAT.5 25P UTP Data Cable

Application

HDCS® CAT.5 multi-pair data cable is applied for structured premise cabling system transmitting voice and data signals. Such cable supports current high-bandwidth applications, especially suitable to Class D Solution.

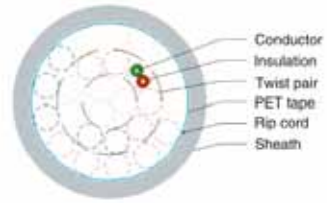
- ISDN
- Token ring
- 100 Mbps TP-PMD
- 155 Mbps /622Mbps ATM
- TR-16 Active and Passive
- 10baseT/100baseTX Fast Ethernet

Feature & Benefit

Rosenberger CAT.5e 25P UTP cable is designed for highly integrated cabling system. Rosenberger *HDCS*® CAT.5 cables exceed requirements for CAT.5 performance with significant margins on all parameters defined in TIA-568-C.2 and ISO/IEC11801 2nd edition. It is available using different jacket material of different flame-retardant levels

Specification

Cable Construction



Conductor:	AWG 24 solid copper
Construction:	25x 2xAGW24
Rip Cord:	Nylon
Lay Length:	Different twist pair with different lay length
Diameter:	Max.14.5

Electrical Performance at 20℃

Frequency (MHz)	Attenuation (dB/100m)	NEXT (dB)	RL (dB)	PSNEXT (dB)	Propagation Delay(ns/100m)
	Max.	Min.	Min.	Min.	Max.
0.772	1.8	64.0	23.0	64.0	575.0
1.0	2.0	62.3	23.0	62.3	570.0
4.0	4.1	53.3	23.0	53.3	552.0
8.0	5.8	48.8	23.0	48.8	546.7
10.0	6.5	47.3	23.0	47.3	545.4
16.0	8.2	44.3	23.0	44.3	543.0
20.0	9.3	42.8	23.0	42.8	542.0
25.0	10.4	41.3	22.0	41.3	541.2
31.25	11.7	39.9	21.0	39.9	540.4
62.5	17.0	35.4	18.0	35.4	538.6
100.0	22.0	32.3	16.0	32.3	537.6

Ordering Information

Order Number	Description
CP11-122-12	CAT.5 indoor 25P UTP cable, CM, 305m
CP11-122-13	CAT.5 indoor 25P UTP cable, LSZH, 305m
CP11-122-14	CAT.5 indoor 25P UTP cable, CMR, 305m
CP11-122-16	CAT.5 indoor 25P UTP cable, CMP, 305m
CP11-122-22	CAT.5 indoor 25P UTP cable, CM, 500m
CP11-122-23	CAT.5 indoor 25P UTP cable, LSZH, 500m
CP11-122-24	CAT.5 indoor 25P UTP cable, CMR, 500m
CP11-122-26	CAT.5 indoor 25P UTP cable, CMP, 500m

CAT.3 Multi-pair UTP Data Cable

Application

HDCS® CAT.3 multi-pair data cable for structured premise cabling transmits voice and data signals. It's suitable for highly integrated applications.

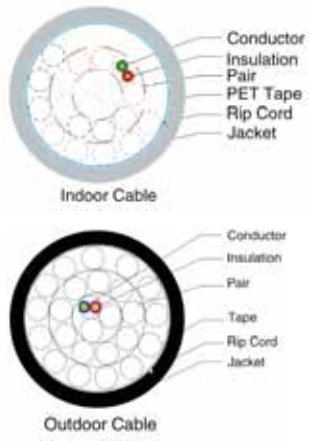
- 10Base-T Ethernet
- TR-16 Active and Passive

Feature & Benefit

Rosenberger CAT.3 multi-pair UTP cable is designed for highly integrated cabling system. Rosenberger *HDCS*® CAT.3 cables exceed requirements for CAT.3 performance with significant margins on all parameters defined in TIA-568-C.2 and ISO/IEC11801 2nd edition. It is available using different jacket material of different flame-retardant levels

Specification

Cable Construction



Conductor: AWG 24 solid copper
Construction: 25x 2xAWG24
50 x 2xAWG24
100 x 2xAWG24
Rip Cord: Nylon
Lay Length: Different twist pair with different lay length

Diameter

Cable Pair	Indoor Cable	Outdoor Cable
25	≤Φ13.0mm	≤Φ13.5mm
50	≤Φ17.0mm	≤Φ18.0mm
100	≤Φ20.5mm	≤Φ21.5mm

Ordering Information

Order Number	Description
CP11-112-12	CAT.3 indoor 25P UTP cable, CM, 305m
CP11-112-13	CAT.3 indoor 25P UTP cable, LSZH, 305m
CP11-112-14	CAT.3 indoor 25P UTP cable, CMR, 305m
CP11-112-16	CAT.3 indoor 25P UTP cable, CMP, 305m
CP12-112-11	CAT.3 outdoor 25P UTP cable, PE, 305m
CP12-112-14	CAT.3 outdoor 25P UTP cable, PE+Oil, 305m

PN scheme: CP1X-11N-MP
X: (application environment) 1=Indoor, 2=Outdoor
N: (number of pairs) 2=25pairs, 3=50pairs, 4=100pairs
M: (packaging length) 1= 305m, 2=500m, 3=1000m
P: (sheath) see last digit of "Order Number"in above table.

12 RJ–Style Modular Jack

CAT.3 Keystone Jack

Application

HDCS® CAT.3 keystone jacks are designed for voice cabling system. It is a part of the *HDCS*® Cabling system, applicable to all structure hardware designs of this series. It can be installed on faceplate or surface mounting box. Such CAT.3 jack utilizes RJ11 interface.

Feature & Benefit

- Use 110 tool or KRONE tool to install
- Front contact with excellent flexibility & reliability
- Meets FCC part 68 standards

90 degree unshielded keystone
Size: L31.0XW22.6XH23.5mm

180 degree unshielded keystone
Size: L 31.5 x W 16.0 x H 22.0mm

Specification

Housing Material:	PC UL94V-0
Insert Material:	PBT+20%GF UL94V-0
PCB Material:	FR-4 1.6mm (Thickness)
Contact Material:	Phosphor bronze stamp PIN 0.35mm
IDC Contact Material:	Phosphor bronze 0.50mm thickness with silver or nickel plating
Wire:	AWG 22 ~ 24
Life (plug in /out):	≥750 times
IDC Life:	≥200 times

Electrical Performance

Voltage Rating:	125 VAC RMS
Current Rating:	1.5 AMP
Contact Resistance:	20mOhm MAX
Insulation Resistance:	500mOhm MIN @ 500V DC
Dielectric Strength:	750V AC RMS 60Hz 1MIN

Ordering Information

Order Number	Description
CP31-411-11	CAT.3 unshielded standard 90 degree keystone Jack, black
CP31-411-12	CAT.3 unshielded standard 90 degree keystone Jack, yellow
CP31-411-13	CAT.3 unshielded standard 90 degree keystone Jack, blue
CP31-411-14	CAT.3 unshielded standard 90 degree keystone Jack, ivory
CP31-411-15	CAT.3 unshielded standard 90 degree keystone Jack, red
CP31-411-16	CAT.3 unshielded standard 90 degree keystone Jack, green
CP31-411-17	CAT.3 unshielded standard 90 degree keystone Jack, white
CP31-411-21	CAT.3 unshielded standard 180 degree keystone Jack, black
CP31-411-24	CAT.3 unshielded standard 180 degree keystone Jack, ivory

RJ-Style Modular Jack

CAT.5e Keystone Jack

Application

HDCS® CAT.5e keystone jack is a part of the *HDCS*® Cabling system, such jack utilizes same mounting feature, applicable to outlet faceplate, surface mounting box and modular patch panels. It supports all CAT.5 and CAT.5e applications, such as 10Base-T, Fast Ethernet, Gigabit Ethernet, 155ATM, 622ATM, and 1.2GATM.

Feature & Benefit

- *HDCS*® keystone jack exceeds CAT.5e highest performance as its design goal. Together with *HDCS*® CAT.5e jumper cables, the *HDCS*® series fully exceed the provision in the CAT.5e standard (ISO11801,TIA568C.2) and have significant performance margin
- Outstanding performance including IL, NEXT/FEXT, Power sum NEXT/FEXT and Return loss, which ensures high link performance
- Termination cap provides excellent strain relief, helps control cable bend radius and securely retains wires
- Uses 110 tool or KRONE tool to install or tool-less keystone available
- Third party 3P certification (UL) for hardware performance
- Handsome product aspects
- Different choice available including UTP 180 degree, UTP 90 degree, FTP 180 degree and FTP 90 degree

180 degree UTP keystone Standard type
Size: L34.5×W16.3×H22.0mm

90 degree UTP keystone Standard type
Size: L34.5×W16.3×H22.0mm

Pegasus Toolless Keystone module
Size : L35.0×W16.5×H23.2mm

180 degree shielded keystone type
Size: L44.0×W17.3×H23.8mm

180 degree shielded toolless keystone type
Size: L41.0×W17.0×H26.0mm

Specification

Material Performance

Plastic:	High impact flame retardant plastic, UL94V-0 rated
Contact:	Phosphor bronze C5210EH
Contact Plating:	Gold plating 50μ "over nickel plating 50~100μ"

Mechanical Performance

Plug Insertion Life:	750 cycle min
Plug Retention Force:	30Lbs min
IDC Contactor:	Accept 22-26 AWG solid wires
Temperature:	-40℃ to 70℃

Electrical Performance

Current Rating:	1.5 AMP
Insulation Resistance:	min. 500MOhms
Contact Resistance:	max. 20mOhms
Dielectric Strength:	750V AC RMS 60Hz 1MIN

High Frequency Performance at 20℃

Frequency (MHz)	Attenuation (dB/100m)	NEXT (dB)	RL (dB)	PSNEXT(dB)	ELFEXT(dB)	PSELFEXT (dB)
	Max.	Min.	Min.	Min.	Min.	Min.
1.0	0.1	65.0	35.5	62.3	63.8	60.8
4.0	0.1	65.0	35.5	53.3	51.7	48.7
8.0	0.1	64.9	35.5	48.8	45.7	42.7
10.0	0.1	63.0	35.5	47.3	43.8	40.8
16.0	0.2	58.9	35.5	44.3	39.7	36.7
20.0	0.2	57.0	34.0	42.8	37.7	34.7
25.0	0.2	55.0	32.0	41.3	35.8	32.8
31.25	0.2	53.1	30.1	39.9	33.9	30.9
62.5	0.3	47.1	24.0	35.4	27.8	24.8
100.0	0.4	43.0	20.0	32.3	23.8	20.8

Ordering Information

Order Number	Description
CP31-522-24	CAT.5e shielded standard 180 degree toolless keystone Jack, ivory
CP31-221-24	CAT.5e shielded standard 180 degree keystone Jack, ivory
CP31-121-21	CAT.5e unshielded standard 180 degree keystone Jack, black
CP31-121-22	CAT.5e unshielded standard 180 degree keystone Jack, yellow
CP31-121-23	CAT.5e unshielded standard 180 degree keystone Jack, blue
CP31-121-24	CAT.5e unshielded standard 180 degree keystone Jack, ivory
CP31-121-25	CAT.5e unshielded standard 180 degree keystone Jack, red
CP31-121-26	CAT.5e unshielded standard 180 degree keystone Jack, green
CP31-121-27	CAT.5e unshielded standard 180 degree keystone Jack, white
CP31-12C-11	CAT.5e unshielded pegasus toolless keystone jack, black
CP31-12C-14	CAT.5e unshielded pegasus toolless keystone jack, ivory
CP31-12E-11	CAT.5e unshielded standard 90 degree keystone Jack, black
CP31-12E-14	CAT.5e unshielded standard 90 degree keystone Jack, ivory

RJ-Style Modular Jack

CAT.6 Keystone Jack

Application

HDCS® CAT.6 keystone jack is a part of the *HDCS*® Cabling system, such jack utilizes same mounting feature, applicable to outlet faceplate, surface mounting box and modular patch panels. It supports all CAT.6, CAT.5e and CAT.5 applications, such as 10Base-T, Fast Ethernet, Gigabit Ethernet, 155ATM, 622ATM, and 1.2GATM.

Feature & Benefit

- *HDCS*® keystone jack exceeds CAT.6 performance requirements of standard ISO11801, TIA 568C.2
- Outstanding performance including IL, NEXT/ FEXT, Power sum NEXT/FEXT and Return loss, which ensures high link performance
- Termination cap provides excellent strain relief, helps control cable bend radius and securely retains wires
- Accepts both 110 tool or KRONE tool to install, and tool-less version keystone available
- Third party 3P certification (UL) for hardware performance
- Aesthetic product appearance
- Diversified options including UTP 180 degree, UTP 90 degree and FTP 180 degree

180 degree UTP keystone Standard type
Size: L34.5×W16.3×H 22.0mm

90 degree UTP keystone Standard type
Size : L 35.0×W16.5×H 22.0mm

Pegasus Toolless Keystone module
Size : L35.0×W16.5×H 23.2mm

180 degree shielded keystone type
Size: L44.0×W17.3×H23.8mm

180 degree shielded toolless keystone type
Size: L41.0×W17.0×H 26.0mm

Specification

Material Performance

Plastic:	High impact flame retardant plastic, UL94V-0 rated
Contact:	Phosphor bronze C5210EH
Contact Plating:	Gold plating 50μ "over nickel plating 50~100μ"

Mechanical Performance

Mating Cycles(w/ plug):	750 cycles min
Plug Retention Force:	30Lbs min
IDC Contact:	Accept 22-26 AWG solid wires
IDC Termination Cycles:	200 times min
Temperature:	-40℃ to 70℃

Electrical Performance

Current Rating:	1.5 AMP
Insulation Resistance:	500Mega Ohms min
Contact Resistance:	20milli-Ohms max
Dielectric Strength:	750V AC RMS 60Hz 1MIN

High Frequency Performance at 20℃

Frequency (MHz)	Attenuation (dB/100m)	NEXT (dB)	RL(Db)	PSNEXT(dB)	ELFEXT(dB)	PSELFEXT (dB)
	Max.	Min.	Min.	Min.	Min.	Min.
1.0	0.1	75.0	30.0	73.0	83.1	80.1
4.0	0.1	75.0	30.0	72.3	71.1	68.1
8.0	0.1	75.0	30.0	71.0	661	65.4
10.0	0.1	74.0	30.0	70.0	63.1	60.1
16.0	0.1	69.9	30.0	65.9	59.0	56.0
20.0	0.1	68.0	30.0	64.0	57.1	54.1
25.0	0.1	66.0	30.0	62.2	53.2	52.6
31.25	0.11	64.1	30.0	60.1	50.0	50.2
62.5	0.16	58.1	28.1	54.1	47.2	44.2
100.0	0.20	54.0	24.0	50.0	43.1	40.1
200.0	0.28	48.0	18.0	44.0	37.1	34.1
250.0	0.32	46.0	16.0	42.0	35.1	32.1

Ordering Information

Order Number	Description
CP31-532-24	CAT.6 shielded standard 180 degree toolless keystone Jack, ivory
CP31-231-24	CAT.6 shielded standard 180 degree keystone Jack, ivory
CP31-131-21	CAT.6 unshielded standard 180 degree keystone Jack, black
CP31-131-22	CAT.6 unshielded standard 180 degree keystone Jack, yellow
CP31-131-23	CAT.6 unshielded standard 180 degree keystone Jack, blue
CP31-131-24	CAT.6 unshielded standard 180 degree keystone Jack, ivory
CP31-131-25	CAT.6 unshielded standard 180 degree keystone Jack, red
CP31-131-26	CAT.6 unshielded standard 180 degree keystone Jack, green
CP31-131-27	CAT.6 unshielded standard 180 degree keystone Jack, white
CP31-13C-11	CAT.6 unshielded Pegasus toolless keystone jack, black
CP31-13C-14	CAT.6 unshielded Pegasus toolless keystone jack, ivory
CP31-13E-11	CAT.6 unshielded standard 90 degree keystone Jack, black
CP31-13E-14	CAT.6 unshielded standard 90 degree keystone Jack, ivory

RJ-Style Modular Jack

CAT.6A Keystone Jack

Application

HDCS® CAT.6A keystone jack is a part of the *HDCS*® Cabling system, such jack utilizes same mounting feature, applicable to outlet faceplate, surface mounting box and modular patch panels. It guarantee 500MHz bandwidth for high grade 10Gbps transmission application, and compatible backwards with all current Ethernet applications, including 10Base-T,100Base-T,1000Base-T, 10GBase-T etc.

Feature & Benefit

- *HDCS*® keystone jack exceeds CAT.6A performance requirements of standard ISO11801, TIA 568C.2
- Outstanding performance including IL, NEXT/ FEXT, Power sum NEXT/FEXT and Return loss, which ensures high link performance
- Termination cap provides excellent strain relief, helps control cable bend radius and securely retains wires
- Accepts both 110 tool or KRONE tool to install, and toolless version keystone available
- Third party 3P certification (UL) for hardware performance
- Aesthetic product appearance
- Diversified options including UTP 180 degree, UTP 90 degree, FTP 180 degree and FTP 90 degree

180 degree UTP keystone Standard type
Size: L38.5×W16.5× H22.0mm

90 degree UTP keystone Standard type
Size :L35.0×W16.5×H22.0mm

180 degree shielded toolless keystone type
Size: L41.0×W17.0×H26.0mm

Specification

Material Performance

Plastic:	High impact flame retardant plastic, UL94V-0 rated
Contact:	Phosphor bronze C5210EH
Contact Plating:	Gold plating 50μ"over nickel plating 50~100μ"

Mechanical Performance

Mating Cycles(w/ plug):	750 cycles min
Plug Retention Force:	30Lbs min
IDC Contact:	Accept 22-26 AWG solid wires
IDC Termination Cycles:	200 times min
Temperature:	-40℃ to 70℃

Electrical Performance

Current Rating:	1.5 AMP
Insulation Resistance:	500Mega Ohms min
Contact Resistance:	20milli-Ohms max
Dielectric Strength:	750V AC RMS 60Hz 1MIN

High Frequency Performance at 20℃

Frequency (MHz)	Attenuation (dB/100m)	NEXT(dB)	RL(dB)	PSNEXT(dB)	ELFEXT(dB)	PSELFEXT (dB)
	Max.	Min.	Min.	Min.	Min.	Min.
1.0	0.1	75.0	30.0	73.0	75.0	80.1
4.0	0.1	75.0	30.0	72.3	71.1	68.1
8.0	0.1	75.0	30.0	71.0	65.0	65.4
10.0	0.1	74.0	30.0	70.0	63.1	60.1
16.0	0.1	69.9	30.0	65.9	59.0	56.0
20.0	0.1	68.0	30.0	64.0	57.1	54.1
25.0	0.1	66.0	30.0	62.2	53.2	52.6
31.25	0.11	64.1	30.0	60.1	50.0	50.2
62.5	0.16	58.1	28.1	54.1	47.2	44.2
100.0	0.20	54.0	24.0	50.0	43.1	40.1
200.0	0.28	48.0	18.0	44.0	37.1	34.1
250.0	0.32	46.0	16.0	42.0	35.1	32.1
300.0	0.35	42.9	18.5	38.9	33.6	30.6
400.0	0.40	37.9	16.0	33.9	31.1	28.1
500.0	0,45	34.0	14.0	30.0	29.1	26.1

Ordering Information

Order Number	Description
CP31-17E-11	CAT.6A UTP standard 90° keystone, black
CP31-17E-14	CAT.6A UTP standard 90° keystone, ivory
CP31-171-21	CAT.6A UTP standard 180° keystone, black
CP31-171-24	CAT.6A UTP standard 180° keystone, ivory
CP31-271-24	CAT.6A shielded standard 180° keystone, ivory
CP31-572-24	CAT.6A shielded standard 180° toolless keystone, ivory

13 HDCS® Outlet & Faceplate

Application

Rosenberger standard RJ45 outlets & faceplates are applicable to all *HDCS*® keystone jacks, telephone and fiber optic modules.

Feature & Benefit

- With stay of the arts designing, they are special for the solution based on 86 or 120 series
- Various surface color matching different customer preference
- Applying separate architecture wrap up the installing screws, together with automatic dust cover and labeling system
- 1, 2, 4-port solution available for accommodation of CAT.3, CAT.5e, CAT.6 and CAT.6A keystone jack
- RoHS Compliant
- Flame-retardant

Single-port, flat

Dual-port, flat

Single-port, angled

Dual-port, angled

1/2-port surface mount box (with shutter)

1/2-port 120 faceplate (with Mark)

Physical Specification

Installation:	Suitable for standard 86x86mm (or 115x70mm) style wall base box
Material:	ABS Plastic UL94 V-0 rated
Storage Temperature:	-40℃ to 70℃

Ordering Information

Order Number	Description
CP21-111-10	86 faceplate single port light type, white
CP21-112-10	86 faceplate dual ports light type, white
CP21-114-10	86 faceplate four ports light type. white
CP21-121-10	86 faceplate 45 degree single port for RJ type, ivory.
CP21-122-10	86 faceplate 45 degree dual ports for RJ type, ivory.
CP22-111-11	Surface mount box single port with shutter door , ivory
CP22-112-11	Surface mount box dual portswith shutter door, ivory
CP22-211-11	Surface mount box single port without shutter door, ivory
CP22-212-11	Surface mount box dual ports without shutter door, ivory
CP22-213-11	Surface mount box four portswithout shutter door, ivory
CP22-214-11	Surface mount box six portswithout shutter door, ivory
CP21-611-10	RJ45 120style 1 port faceplate, white, W/Mark
CP21-612-10	RJ45 120style 2 ports faceplate, white, W/Mark

HDCS ® *Floor Faceplate*

Application

Rosenberger standard RJ45 Floor Faceplates are applicable to all *HDCS*® keystone jacks, telephone &data and fiber optic modules.

Feature & Benefit

- With stay of the arts designing, they are special for the solution based on 120x120 system
- Applying separate architecture wrap up the installing screws
- 1, 2, 3-port solution available for accommodation of CAT.3, CAT.5e, CAT.6 and CAT.6A keystone jack
- RoHS Compliant
- Flame-retardant

1/2port, Floor Faceplate

Physical Specification

Installation:	Suitable for standard 100x100mm style floor base box
Material:	Copper alloy, ABS plastic UL94 V-0 rated
Storage temperature:	-40℃ to 70℃

Ordering Information

Order Number	Description
CP23-101-31	120 floor faceplate 1port square style, golden
CP23-102-31	120 floor faceplate 2ports square style, golden
CP23-103-31	120 floor faceplate 3ports square style, golden

14 Copper Patch Panel

Voice Patch Panel

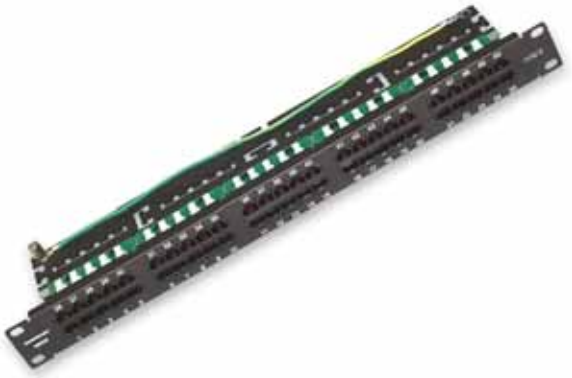
Application

Rosenberger *HDCS*® voice patch panel has excellent performance at high-frequency band. Such patch panel has standard RJ style user interface, supporting quick and easy installation.

Feature & Benefit

- *HDCS*® voice patch panel targeting high-quality voice signal transmission
- Meeting CAT.3 performance requirements of TIA 568-C.2
- Modular design, each module is fixed with plastic rivet, to realize convenient maintenance
- Effective grounding mechanism, safety operation is based on grounding terminal located at either side(L or R)
- Integrated with cable support bar
- Ruggedized structure, user friendly

Unshielded 1HU 25-Port Voice Patch Panel



Unshielded 1HU 50-Port Voice Patch Panel

Specification

Material Performance

Front Pane:	Steel, powder coating
Plasti :	High impact flame retardant plastic, UL94V-0 rated
Contact:	Phosphor bronze C5210EH
Contact Plating:	Gold plating 50μ "over nickel plating 50~100μ"

Mechanical Performance

Plug Insertion Life:	750 cycle min
Plug Retention Force:	30Lbs min
IDC Contactor:	Accept 22-26 AWG solid wires
IDC Life:	200 times min.
Temperature:	-40℃ to 70℃

Electrical Performance

Current Rating :	1.5 AMP
Insulation Resistance:	500Mega Ohms min
Contact Resistance:	20milli-Ohms max
Dielectric Strength:	750V AC RMS 60Hz 1MIN

Ordering Information

HDCS® P/N	Description
CP41-141-06	CAT.3 25P unshielded voice patch panel, black
CP41-141-07	CAT.3 50P unshielded voice patch panel, black

Copper Patch Panel

CAT.5e Data Patch Panel

Application

Rosenberger *HDCS*® patch panels are designed for both unshielded and shielded cabling system with excellent performance and easy installation, compatible with all *HDCS*® Modules, meanwhile having extremely high flexibility, adaptability and maximally integrated designing. It is available with 24 ports.

Feature & Benefit

- *HDCS*® patch panel exceeds CAT.5e highest performance requirements of TIA 568-C.2
- Outstanding performance including IL, NEXT/ FEXT, Power sum NEXT/FEXT and Return loss guaranteeing good link performance
- Delivered with plastic cable management bar, installation screws and labelling system
- Both modular type and IDC type available for different customer choice
- Unshielded or shielded solution

CAT.5e Unshielded Modular Path Panel

CAT.5e Unshielded Modular 'W'-Shape Path Panel

CAT.5e UTP Modular Dust Proof Patch Panel

CAT.5e FTP Modular Dust Proof Patch Panel

Specification

Material Performance

Front panel:	Steel, powder coating
Plastic:	High impact flame retardant plastic, UL94V-0 rated
Contact:	Phosphor bronze C5210EH
Contact Plating:	Gold plating 50μ "over nickel plating 50~100μ"

Mechanical Performance

Plug Insertion Life:	750 cycle min
Plug Retention Force:	30Lbs min
IDC Contactor:	Accept 22-26 AWG solid wires
IDC Termination Cycles:	200 times min.
Temperature:	-40℃ to 70℃

Electrical Performance

Current Rating:	1.5 AMP
Insulation Resistance:	500 Mega ohms min
Contact Resistance:	20 milli-ohms max
Dielectric Strength:	750V AC RMS 60Hz 1min

High Frequency Performance (at 20℃)

Frequency (MHz)	Attenuation (dB/100m)	NEXT(dB)	RL(dB)	PSNEXT(dB)	ELFEXT(dB)	PSELFEXT (dB)
	Max.	Min.	Min.	Min.	Min.	Min.
1.0	0.1	65.0	35.5	62.3	63.8	60.8
4.0	0.1	65.0	35.5	53.3	51.7	48.7
8.0	0.1	64.9	35.5	48.8	45.7	42.7
10.0	0.1	63.0	35.5	47.3	43.8	40.8
16.0	0.2	58.9	35.5	44.3	39.7	36.7
20.0	0.2	57.0	34.0	42.8	37.7	34.7
25.0	0.2	55.0	32.0	41.3	35.8	32.8
31.25	0.2	53.1	30.1	39.9	33.9	30.9
62.5	0.3	47.1	24.0	35.4	27.8	24.8
100.0	0.4	43.0	20.0	32.3	23.8	20.8

Ordering Information

HDCS® P/N	Description
CP41-421-03	CAT.5e 24P unshielded modular patch panel with keystone jack, black.
CP41-421-03-P	CAT.5e 24P unshielded modular patch panel, loaded with Pegasus jack, black.
CP41-421-03N	CAT.5e 24P UTP modular dustproof patch panel with keystone jack, black.
CP41-421-03N-P	CAT.5e 24P UTP modular dustproof patch panel, loaded with Pegasus jack, black.
CP41-421-03N-E	CAT.5e 24P UTP modular dustproof patch panel, loaded without keystone jack, black.
CP41-431-13	CAT.5e 24P w-Shape unshielded modular patch panel with keystone jack, black
CP41-421-13-P	CAT.5e 24P w-Shape unshielded modular patch panel with Pegasus jack, black
CP41-321-03N	CAT.5e 24P shielded modular dustproof patch pane with keystone jack, black
CP41-321-03N-E	CAT.5e 24P shielded modular dustproof patch panel without keystone jack, black
CP91-100-00	Blank cover for modular panel port, black
CP91-200-00	Blank cover for modular panel port, white

Copper Patch Panel

CAT.6 Data Patch Panel

Application

Rosenberger *HDCS*® patch panels are designed for both unshielded and shielded cabling system with excellent performance and easy installation, compatible with all *HDCS*® Modules, meanwhile having extremely high flexibility, adaptability and maximally integrated designing. It is available with 24 ports.

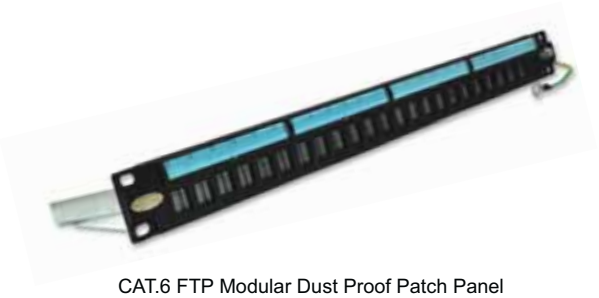
Feature & Benefit

- *HDCS*® patch panel exceeds CAT.6 highest performance requirements of TIA 568-C.2
- Outstanding performance including IL, NEXT/ FEXT, Power sum NEXT/FEXT and Return loss guaranteeing good link performance
- Delivered with plastic cable management bar, installation screws and labelling system
- Both modular type and IDC type available for different customer choice
- Unshielded or shielded solution

CAT.6 Unshielded Modular Path Panel

CAT.6 Unshielded Modular 'W'-Shape Path Panel

CAT.6 UTP Modular Dust Proof Patch Panel



CAT.6 FTP Modular Dust Proof Patch Panel

Specification

Material Performance

Front Panel:	Steel, powder coating
Plastic:	High impact flame retardant plastic, UL94V-0 rated
Contact:	Phosphor bronze C5210EH
Contact Plating:	Gold plating 50μ "over nickel plating 50~100μ"

Mechanical Performance

Plug Insertion Life:	750 cycle min
Plug Retention Force:	30Lbs min
IDC Contactor:	Accept 22-26 AWG solid wires
IDC Termination Cycles :	200 times min.
Temperature:	-40℃ to 70℃

Electrical Performance

Current Rating:	1.5 AMP
Insulation Resistance:	500 Mega ohms min
Contact Resistance:	20 milli-ohms max
Dielectric Strength:	750V AC RMS 60Hz 1min

High Frequency Performance (at 20℃)

Frequency (MHz)	Attenuation (dB/100m)	NEXT(dB)	RL(dB)	PSNEXT(dB)	ELFEXT(dB)	PSELFEXT (dB)
	Max.	Min.	Min.	Min.	Min.	Min.
1.0	0.1	75.0	30.0	73.0	83.1	80.1
4.0	0.1	75.0	30.0	72.3	71.1	68.1
8.0	0.1	75.0	30.0	71.0	661	65.4
10.0	0.1	74.0	30.0	70.0	63.1	60.1
16.0	0.1	69.9	30.0	65.9	59.0	56.0
20.0	0.1	68.0	30.0	64.0	57.1	54.1
25.0	0.1	66.0	30.0	62.2	53.2	52.6
31.25	0.11	64.1	30.0	60.1	50.0	50.2
62.5	0.16	58.1	28.1	54.1	47.2	44.2
100.0	0.20	54.0	24.0	50.0	43.1	40.1
200.0	0.28	48.0	18.0	44.0	37.1	34.1
250.0	0.32	46.0	16.0	42.0	35.1	32.1

Ordering Information

HDCS® P/N	Description
CP41-431-03	CAT.6 24P unshielded modular patch panel with keystone jack, black.
CP41-431-03-P	CAT.6 24P unshielded modular patch panel, loaded with pegasus jack, black.
CP41-431-03N	CAT.6 24P UTP modular dustproof patch panel with keystone jack, black.
CP41-431-03N-P	CAT.6 24P UTP modular dustproof patch panel, loaded with pegasus jack, black.
CP41-431-03N-E	CAT.6 24P UTP modular dustproof patch panel, loaded without keystone jack, black.
CP41-431-13	CAT.6 24P w-Shape unshielded modular patch panel with keystone jack, black
CP41-431-13-P	CAT.6 24P w-Shape unshielded modular patch panel with Pegasus jack, black
CP41-331-03N	CAT.6 24P shielded modular dustproof patch panel with keystone jack, black
CP41-331-03N-E	CAT.6 24P shielded modular dustproof patch panel without keystone jack, black
CP91-100-00	Blank cover for modular panel port, black
CP91-200-00	Blank cover for modular panel port, white

Copper Patch Panel

CAT.6A Data Patch Panel

Application

Rosenberger *HDCS*® patch panels are designed for both unshielded and shielded cabling system with excellent performance and easy installation, compatible with all *HDCS*® Modules, meanwhile having extremely high flexibility, adaptability and maximally integrated designing. It is available with 24 ports.

Feature & Benefit

- *HDCS*® patch panel exceeds CAT.6A highest performance requirements of TIA 568-C.2
- Outstanding performance including IL, NEXT/ FEXT, Power sum NEXT/FEXT and Return loss guaranteeing good link performance
- Delivered with plastic cable management bar, installation screws and labelling system
- Both modular type and IDC type available for different customer choice
- Unshielded or shielded solution

CAT.6A FTP Modular Dust Proof Patch Panel

CAT.6A Unshielded Modular Path Panel

Specification

Material Performance

Front Panel:	Steel, powder coating
Plastic:	High impact flame retardant plastic, UL94V-0 rated
Contact:	Phosphor bronze C5210EH
Contact Plating:	Gold plating 50μ "over nickel plating 50~100μ"

Mechanical Performance

Plug Insertion Life:	750 cycle min
Plug Retention Force:	30Lbs min
IDC Contactor:	Accept 22-26 AWG solid wires
IDC Termination Cycles:	200 times min.
Temperature:	-40℃ to 70℃

Electrical Performance

Current Rating:	1.5 AMP
Insulation Resistance:	500Mega ohms min
Contact Resistance:	20milli-ohms max
Dielectric Strength:	750V AC RMS 60Hz 1min

High Frequency Performance (at 20℃)

Frequency (MHz)	Attenuation (dB/100m)	NEXT(dB)	RL(dB)	PSNEXT(dB)	FEXT(dB)	PSFEXT (dB)
	Max.	Min.	Min.	Min.	Min.	Min.
1.0	0.10	75.0	30.0	73.0	75.0	80.1
4.0	0.10	75.0	30.0	72.3	71.1	68.1
8.0	0.10	75.0	30.0	71.0	65.0	65.4
10.0	0.10	74.0	30.0	70.0	63.1	60.1
16.0	0.10	69.9	30.0	65.9	59.0	56.0
20.0	0.10	68.0	30.0	64.0	57.1	54.1
25.0	0.10	66.0	30.0	62.2	53.2	52.6
31.25	0.11	64.1	30.0	60.1	50.0	50.2
62.5	0.16	58.1	30.0	54.1	47.2	44.2
100.0	0.20	54.0	28.0	50.0	43.1	40.1
200.0	0.28	48.0	22.0	44.0	37.1	34.1
250.0	0.32	46.0	200	42.0	35.1	32.1
300.0	0.35	42.9	18.5	38.9	33.6	30.6
400.0	0.40	37.9	16.0	33.9	31.1	28.1
500.0	0,45	34.0	14.0	30.0	29.1	26.1

Ordering Information

HDCS® P/N	Description
CP41-451-03	CAT.6A 24P UTP modular patch panel, loaded with keystone jack, black.
CP41-451-03-E	CAT.6A 24P UTP modular patch panel, loaded without keystone jack, black.
CP41-351-03N	CAT.6A 24P shielded modular dustproof patch panel with keystone jack, black
CP41-351-03N-E	CAT.6A 24P shielded modular dustproof patch panel without keystone jack, black
CP91-100-00	Blank cover for modular panel port, black
CP91-200-00	Blank cover for modular panel port, white

15 Cable Management Panel

Application

Rosenberger *HDCS*®cable management panel is standard 19" rack mount, applied to manage patch cords coming from distribution frame and network equipments. Products can be classified as per material - plastic and metal style, height - 1U and 2U, depthnormal and deepened.

Feature & Benefit

- cable management panel helps to guide the cable with proper bending
- 1U or 2U is applied to work with different patch panel
- Deepened-Version is used tor network equipment with protruded front panel
- *HDCS*® Cable management panel with cover helps to protect cable as well as makes the user interface clean and nice
- *HDCS*® cable management panel Integrated with cable support bar
- Slots in top and bottom side are used for upwards and downwards cabling, especially suitable to 110-type patch cord management

1HU Metal Cable Management Panel, Black

1HU Metal Cable Management Panel, Deepened Version, Black

1HU Plastic 110-type Cable Management Panel

Ordering Information

HDCS®PN	Description
CP42-111-01	Plastic 110-type cable management panel, HU, ivory
CP42-221-01	Metal cable management panel, 1HU, black
CP42-131-01	Plastic cable management panel, 1HU, deepened version, black
CP42-231-01	Metal cable management panel, 1HU, deepened bersion, black
CP42-231-02	Metal cable management panel, 2HU, deepened bersion, black

16 Rosenberger HDCS® 110 System

Application

- 10Base-T Ethernet
- 100Base-TX Fast Ethernet
- 1000Base-T
- 155Mbit ATM
- 622Mbit ATM
- TR-16 Active
- TR-16 Passive
- Freely connect with any kind of 1, 2, 4, 5-pair standard modules
- Accept 22~26AWG wires

Feature & Benefit

- *HDCS*®110 interconnect system is designed for unshielded premise cabling system with excellent performance and easy installation, compatible with all HDCS 110 blocks
- High flexibility, stability, adaptability and smoothly fits into voice communication system
- It is available in wall mount or rack mount version
- Modular structure makes system expansion and restructuring easy and quick
- 110 distribution frame is made of plastic or sheet-metal of high mechanical performance, supporting termination operation using punch tool

Specification

Electrical and Mechanical Performance

Contact Resistance	≤100milli-ohm
Life (plug & pull)	≥750 times
IDC Life	≥200 times
Dielectric Strength	AC 1KV, 1 Min. no breakdown
Gold Plating Thickness	≥50μ"

Transmission Performance at 20℃

Frequency (MHz)	Attenuation(dB/100m)	NEXT (dB)	RL (dB)	PSNEXT (dB)	ELFEXT (dB)	PSELFEXT (dB)
	Max.	Min.	Min.	Min.	Min.	Min.
1.0	0.1	65.0	35.5	62.3	63.8	60.8
4.0	0.1	65.0	35.5	53.3	51.7	48.7
8.0	0.1	64.9	35.5	48.8	45.7	42.7
10.0	0.1	63.0	35.5	47.3	43.8	40.8
16.0	0.2	58.9	35.5	44.3	39.7	36.7
20.0	0.2	57.0	34.0	42.8	37.7	34.7
25.0	0.2	55.0	32.0	41.3	35.8	32.8
31.25	0.2	53.1	30.1	39.9	33.9	30.9
62.5	0.3	47.1	24.0	35.4	27.8	24.8
100.0	0.4	43.0	20.0	32.3	23.8	20.8

Ordering information

HDCS® P/N	Description
CP51-221-11	110 block 50pairs patch panel, 1HU, rack mount
CP51-221-21	110 block 100pairs patch panel, 1HU, rack mount
CP51-221-32	110 block 200pairs patch panel, 2HU, rack mount
CP51-110-10	110 block 50pairs patch panel, with leg, wall mount
CP51-110-20	110 block 100pairs patch panel, with leg, wall mount
CP51-110-30	110 block 200pairs patch panel, with leg, wall mount
CP51-210-10	110 block 50pairs patch panel, without leg, wall mount
CP51-210-20	110 block 100pairs patch panel, without leg, wall mount
CP51-210-30	110 block 200pairs patch panel, without leg, wall mount

17 Copper Patch Cord & Plug

CAT.6A Patch Cord

Application

HDCS® CAT.6A patch cords for structured premise cabling transmit voice, data and video signals. They support current high-bandwidth applications, especially suitable to Class E_A Solution.

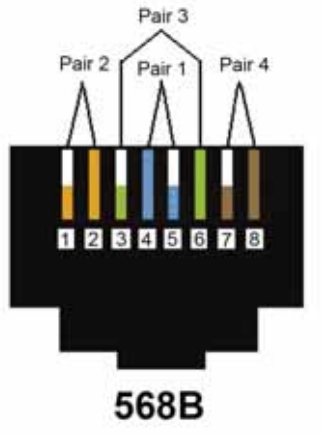
- VoIP
- ISDN
- Token ring
- 100 Mbps TP-PMD
- analog and digital video
- TR-16 Active and Passive
- 155 Mbps /622Mbit /1.2 Gbps ATM
- 10BaseT/100BaseTX Fast /1000BaseTX Gigabit Ethernet/10GBase-T Gigabit Ethernet

Feature & Benefit

- Rosenberger CAT.6A patch cord is designed for unshielded and shielded cabling system with excellent performance and easy installation
- Plug boot is made using over molding technology, guarantee stable and reliable performance
- They exceed TIA-568C.2 CAT.6A requirements, together with unshielded and shielded version for Class E_A solution. It is available in PVC and LSZH jacket
- Utilizing flexible stranded patch cable
- Connector contacts are plated with gold of 50µ" thick, minimizing contact resistance, supporting transmission high frequency signals

Ordering Information

Order Number	Description
CP61-431-11	CAT.6A unshielded patch cord, 1M, PVC, grey
CP61-431-12	CAT.6A unshielded patch cord, 2M, PVC, grey
CP61-431-15	CAT.6A unshielded patch cord, 5M, PVC, grey
CP64-431-11	CAT.6A shielded patch cord, 1M, PVC, grey
CP64-431-12	CAT.6A shielded patch cord, 2M, PVC, grey
CP64-431-15	CAT.6A shielded patch cord, 5M, PVC, grey
CP61-431-21	CAT.6A unshielded patch cord, 1M, LSZH, grey
CP61-431-22	CAT.6A unshielded patch cord, 2M, LSZH, grey
CP61-431-25	CAT.6A unshielded patch cord, 5M, LSZH, grey
CP64-431-21	CAT.6A shielded patch cord, 1M, LSZH, grey
CP64-431-22	CAT.6A shielded patch cord, 2M, LSZH, grey
CP64-431-25	CAT.6A shielded patch cord, 5M, LSZH, grey



PN code: CPxx-xxn-xm

n:(color) 1=grey, 2=yellow, 3=blue, 4=orange, 5=red, 6=green, 7=white

m: (length) 1= 1m, 2=2m, 3=3m, 4=4m, 5=5m, 7=10m, 8=15, C=8m

For more information please contact the regional sales representative.

Copper Patch Cord & Plug

CAT.6 Patch Cord

Application

HDCS® CAT.6 patch cords for structured premise cabling transmit voice, data and video signals. They support current high-bandwidth applications, especially suitable to Class E Solution.

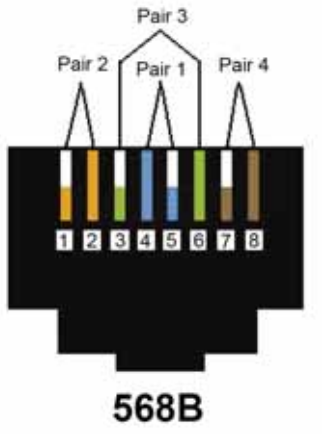
- VoIP
- ISDN
- Token ring
- 100 Mbps TP-PMD
- analog and digital video
- TR-16 Active and Passive
- 155 Mbps /622Mbit /1.2 Gbps ATM
- 10BaseT/100BaseTX Fast /1000BaseTX Gigabit Ethernet

Feature & Benefit

- Rosenberger CAT.6 patch cord is designed for unshielded and shielded cabling system with excellent performance and easy installation
- Plug boot is made using over molding technology, guarantee stable and reliable performance
- They exceed TIA-568C.2 CAT.6 requirements, together with unshielded and shielded version for Class E solution. It is available in PVC and LSZH jacket
- Utilizing flexible stranded patch cable
- Connector contacts are plated with gold of 50µ" thick, minimizing contact resistance, supporting transmission high frequency signals

Electrical Performance at 20℃

Frequency (MHz)	NEXT (dB)			RL (dB)
	2m cord	5m cord	10m cord	
1	65	65	65	19.8
4	65	65	65	21.6
8	65	65	64.8	22.5
10	65	64.5	62.9	22.8
16	62	60.5	59	23.4
20	60.1	58.6	57.2	23.7
25	58.1	56.8	55.4	24.0
31.25	56.2	54.9	53.6	23.0
62.5	50.4	49.2	48.1	20.0
100	46.4	45.3	44.4	18.0
125	44.5	43.5	42.7	17.0
150	43	42.1	41.4	16.2
175	41.8	40.9	40.2	15.5
200	40.6	39.8	39.3	15.0
225	39.7	38.9	38.4	14.5
250	38.8	38.1	37.6	14.0



Ordering Information

Standard Patch Cord

Order Number	Description
CP61-421-11	CAT.6 unshielded patch cord, 1M, PVC, grey
CP61-421-12	CAT.6 unshielded patch cord, 2M, PVC, grey
CP61-421-15	CAT.6 unshielded patch cord, 5M, PVC, grey
CP61-421-17	CAT.6 unshielded patch cord, 10M, PVC, grey
CP64-421-11	CAT.6 shielded patch cord, 1M, PVC, grey
CP64-421-12	CAT.6 shielded patch cord, 2M, PVC, grey
CP64-421-15	CAT.6 shielded patch cord, 5M, PVC, grey
CP64-421-17	CAT.6 shielded patch cord, 10M, PVC, grey
CP61-421-21	CAT.6 unshielded patch cord, 1M, LSZH, grey
CP61-421-22	CAT.6 unshielded patch cord, 2M, LSZH, grey
CP61-421-25	CAT.6 unshielded patch cord, 5M, LSZH, grey
CP64-421-21	CAT.6 shielded patch cord, 1M, LSZH, grey
CP64-421-22	CAT.6 shielded patch cord, 2M, LSZH, grey
CP64-421-25	CAT.6 shielded patch cord, 5M, LSZH, grey

Enhanced Patch Cord

Order Number	Description
CP61-421-1P1	Enhanced CAT.6 UTP patch cord, 1M, PVC, grey
CP61-421-1P2	Enhanced CAT.6 UTP patch cord, 2M, PVC, grey
CP61-421-1P5	Enhanced CAT.6 UTP patch cord, 5M, PVC, grey
CP61-421-1P7	Enhanced CAT.6 UTP patch cord, 10M, PVC, grey
CP61-421-2P1	Enhanced CAT.6 UTP patch cord, 1M, LSZH, grey
CP61-421-2P2	Enhanced CAT.6 UTP patch cord, 2M, LSZH, grey
CP61-421-2P5	Enhanced CAT.6 UTP patch cord, 5M, LSZH, grey
CP61-421-2P7	Enhanced CAT.6 UTP patch cord, 10M, LSZH, grey

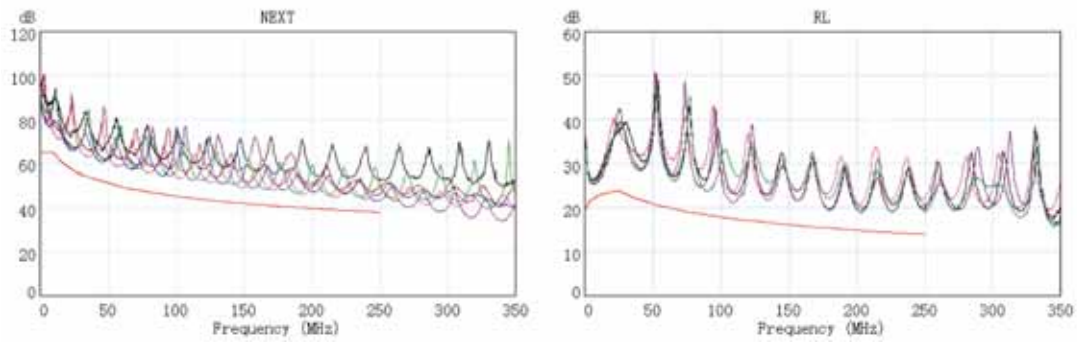
PN code: CPxx-xxn-xm

n:(color) 1=grey, 2=yellow, 3=blue, 4=orange, 5=red, 6=green, 7=white

m: (length) 1= 1m, 2=2m, 3=3m, 4=4m, 5=5m, 7=10m, 8=15, C=8m

For more information please contact the regional sales representative.

Characteristic Graph



Copper Patch Cord & Plug

CAT.5e Patch Cord

Application

HDCS® CAT.5e LAN cable assemblies for structured premises cabling transmit of voice, data and video signals. They support current high-bandwidth applications, especially suitable to Class D Solution.

- VoIP
- ISDN
- Token ring
- 100 Mbps TP-PMD
- analog and digital video
- TR-16 Active and Passive
- 155 Mbps /622Mbps ATM
- 10baseT/100baseTX Fast Ethernet

Feature & Benefit

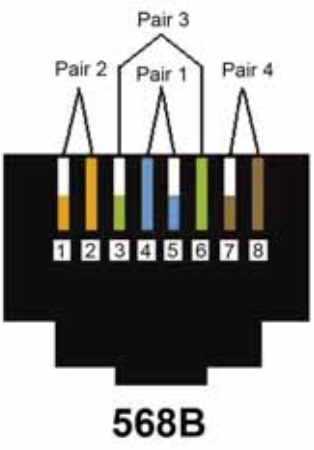
- Rosenberger CAT.5e patch cord is designed for unshielded and shielded cabling system with excellent performance and easy installation
- Plug boot is made using over molding technology, guarantee stable and reliable performance
- They exceed TIA-568C.2 CAT.5e requirements, together with unshielded and shielded version for Class E solution. It is available in PVC and LSZH jacket
- Utilizing flexible stranded patch cable
- Connector contacts are plated with gold of 50µ" thick, minimizing contact resistance, supporting transmission high frequency signals

Specification

- Multi-conductor inter-twisted soft copper wire Shielded / Unshielded plug with plastic injected Plastic boot
- Jacket material can be of PVC or LSZH

Electrical Performance at 20℃

Frequency (MHz)	NEXT (dB)			RL (dB)
	2m cord	5m cord	10m cord	
1	65	65	65	19.8
4	62.3	61.5	60.4	21.6
8	56.4	55.6	54.7	22.5
10	54.5	53.7	52.8	22.8
16	50.4	49.8	48.9	23.4
20	48.6	47.9	47.1	23.7
25	46.7	46	45.3	24.0
31.25	44.8	44.2	43.6	23.0
62.5	39	38.5	38.1	20.0
100	35.1	34.8	34.6	18.0



Ordering Information

Standard Patch Cord

Order Number	Description
CP61-411-11	CAT.5e unshielded patch cord, 1M, PVC, grey
CP61-411-12	CAT.5e unshielded patch cord, 2M, PVC, grey
CP61-411-15	CAT.5e unshielded patch cord, 5M, PVC, grey
CP61-411-17	CAT.5e unshielded patch cord, 10M, PVC, grey
CP64-411-11	CAT.5e shielded patch cord, 1M, PVC, grey
CP64-411-12	CAT.5e shielded patch cord, 2M, PVC, grey
CP64-411-15	CAT.5e shielded patch cord, 5M, PVC, grey
CP64-411-17	CAT.5e shielded patch cord, 10M, PVC, grey
CP61-411-21	CAT.5e unshielded patch cord, 1M, LSZH, grey
CP61-411-22	CAT.5e unshielded patch cord, 2M, LSZH, grey
CP61-411-25	CAT.5e unshielded patch cord, 5M, LSZH, grey
CP64-411-21	CAT.5e shielded patch cord, 1M, LSZH, grey
CP64-411-22	CAT.5e shielded patch cord, 2M, LSZH, grey
CP64-411-25	CAT.5e shielded patch cord, 5M, LSZH, grey

Enhance Patch Cord

Order Number	Description
CP61-411-1P1	Enhanced CAT.5e UTP patch cord, 1M, PVC, grey
CP61-411-1P2	Enhanced CAT.5e UTP patch cord, 2M, PVC, grey
CP61-411-1P5	Enhanced CAT.5e UTP patch cord, 5M, PVC, grey
CP61-411-1P7	Enhanced CAT.5e UTP patch cord, 10M, PVC, grey
CP61-411-2P1	Enhanced CAT.5e UTP patch cord, 1M, LSZH, grey
CP61-411-2P2	Enhanced CAT.5e UTP patch cord, 2M, LSZH, grey
CP61-411-2P5	Enhanced CAT.5e UTP patch cord, 5M, LSZH, grey
CP61-411-2P7	Enhanced CAT.5e UTP patch cord, 10M, LSZH, grey

PN code: CPxx-xxn-xm

n:(color) 1=grey, 2=yellow, 3=blue, 4=orange, 5=red, 6=green, 7=white

m: (length) 1= 1m, 2=2m, 3=3m, 4=4m, 5=5m, 7=10m, 8=15, C=8m

For more information please contact the regional sales representative.

Copper Patch Cord & Plug

RJ45/110 and 110/110 Patch Cord

Application

- 10BaseT Ethernet
- 100BaseTX Fast Ethernet
- 155Mbit ATM
- 622Mbit ATM
- TR-16 Active
- TR-16 Passive

Feature & Benefit

Rosenberger *HDCS*® RJ45 to 110 and 110 to 110 CAT.5e Patch Cord is designed for unshielded cabling system with excellent performance and easy installation, meanwhile having extremely high flexibility, adaptability and maximally integrated designing. They exceed TIA-568C.2 CAT.5e requirements, together with RJ45-110 and 110-110 version for Class D2002 solution. It is available in PVC and LSZH jacket.

Ordering Information

Order Number	Description
CP62-111-11	CAT.5e 1pair RJ45/110 unshielded, PVC, 1m, grey
CP62-111-21	CAT.5e 1pair RJ45/110 unshielded, LSZH, 1m, grey
CP62-211-11	CAT.5e 2pairs RJ45/110 unshielded, PVC, 1m, grey
CP62-211-21	CAT.5e 2pairs RJ45/110 unshielded, LSZH, 1m, grey
CP62-411-11	CAT.5e 4pairs RJ45/110 unshielded, PVC, 1m, grey
CP63-211-11	CAT.5e 2pairs 110/110 unshielded, PVC, 1m, grey
CP63-211-21	CAT.5e 2pairs 110/110 unshielded, LSZH, 1m, grey
CP63-111-11	CAT.5e 1pair 110/110 unshielded, PVC, 1m, grey
CP63-111-21	CAT.5e 1pair 110/110 unshielded, LSZH, 1m, grey
CP63-511-15	CAT.5e 4pair 110/110 unshielded, PVC, 5m, grey

PN code: CPxx-hxn-xm
h: (pair) 1=1 pair, 2=2 pair, 3=4 pair-568A , 4=4 pair-568B, 5=4 pair
n: (color) 1=grey, 2=yellow, 3=blue, 4=orange, 5=red, 6=green, 7=white
m: (length) 1= 1m, 2=2m, 3=3m, 4=4m, 5=5m, 7=10m, 8=15, C=8m
For more information please contact the regional sales representative.

Crystal Plug

Application

Rosenberger *HDCS*® CAT.6, CAT.5e and CAT.3 crystal plugs are designed for shielded and unshielded cabling system application. They are available in RJ45 and RJ11 versions.

- VoIP
- ISDN
- Token ring
- 100 Mbps TP-PMD
- analog and digital video
- TR-16 Active and Passive
- 155 Mbps /622Mbit /1.2 Gbps ATM
- 10BaseT/100BaseTX Fast /1000BaseTX Gigabit Ethernet

Specification

Electrical Performance

Voltage Rating:	125 VAC RMS
Current Rating:	1.5 AMP
Contact Resistance:	100mill-ohm MAX
Insulation Resistance:	1000Mohm MIN @ 500V DC
Dielectric Strength:	750V AC RMS 60Hz 1min

Mechanical Performance

Housing Material:	PC UL94V-0
Contact Material:	Phosphor bronze stamp PIN 0.35mm
Wire:	AWG 22 ~ 24
Life (plug in /out):	≥750 times

Ordering Information

Order Number	Description
CP13-111-01	CAT.5e unshielded plug RJ45
CP13-211-01	CAT.5e shielded plug RJ45
CP13-111-11	CAT.6 unshielded plug RJ45
CP13-211-11	CAT.6 shielded plug RJ45
CP13-112-31	CAT.3 unshielded plug RJ11

18 IP67 Industrial Cabling System

Application

Rosenberger *HDCS*® provides IP67 level cabling system, consisting of IP67 module, patch cord and faceplate applied into harsh environment, supporting application of 10BASE-T, 100BASE-TX, 1000BAST-TX etc.

Feature & Benefit

- Total IP67 level solution
- Water-proof, dust-proof, oil-proof and UV-resistant
- Quick and easy mating of plug and jack, simply rotating 120 degree
- High performance with min 3dB headroom above standard
- Multiple options: IP67 UTP and FTP, CAT.5e and CAT.6

Specification

Physical Performance

Plastic:	Impact resistant, UL94V-0
Metal Contact:	Phosphor bronze C5210EH
IDC Contact Plating:	50μ" gold plating over 50-100μ" nickel plating layer
Faceplate Material:	Stainless-steel, t=0.8mm

Mechanical Performance

Mating Cycles (RJ45 Jack):	≥750 times
IDC Termination Cycles:	≥200 times
IDC Applicable Conductor:	22-26AWG solid
Working Temperature:	-40ºC~ +70ºC

Electrical Performance

Rated Current:	1.5AMP
Contact Resistance:	20mΩmax.
Insulation Resistance:	500MΩ min. @ 500V DC
Dielectric Strength:	750V AC RMS 60Hz 1min

IP67 Module

IP67 Faceplate

IP67 Patch Cord

Ordering Information

Order Number	Description
CP31-129-21	IP67 CAT.5e unshielded 180 degree module, black
CP31-229-21	IP67 CAT.5e shielded 180 degree module, black
CP31-139-21	IP67 CAT.6 unshielded 180 degree module, black
CP31-239-21	IP67 CAT.6 shielded 180 degree module, black

IP67 Faceplate

Order Number	Description
CP21-311-31	IP67 single-port faceplate, stainless-steel
CP21-312-31	IP67 dual-port faceplate, stainless-steel

19 Smart Home–Cabling System

Application

Rosenberger *HDCS*® Smart Home-Cabling System is specially designed for the area of consolidation point of office application, FTTH access point and intelligent home cabling. It is the part of the *HDCS*® cabling system.

Feature & Benefit

- Flexible installation multi-type of intelligent modules are offered
- Voice module, data module, switch module, Video module and power module are supported
- Data module equipped with function of DHCP server, supports many persons share with internet sources
- Standard connective port with voice module, data module and video module
- The style of back wire management makes the product more human-centered and handsome
- 6U,10U,14U types of outer box available

Performance Parameter

Box

- Material of Box — cold rolled steel
- Door-open Angle — ≥180°
- Worked Temperature — -20 ~ 80℃
- Worked Humidity — 10 ~ 95%RH

Voice Module

- Input Port — 1 to 2
- Output Port — 7 to 8
- Access Type — RJ45
- Wire Gauge — 22~24AWG
- Life (plug in /out) — ≥750 times
- Worked Temperature — 0 ~ 45℃
- Worked Humidity — 10 ~ 95%RHv
-

Data Module

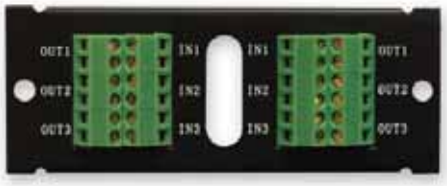
- Input Port — 5 to 8
- Access Type — RJ45
- RJ45 Jack — CAT.5e
- Wire Gauge — 22~24AWG
- Life (plug in /out) — ≥750 times
- Worked Temperature — 0 ~ 40℃
- Worked Humidity — 10 ~ 95%RHv

Video Module

- Input Port 1 to 2
- Output Port 4 to 6
- Access Type F
- Wire Gauge 75Ω Coaxial
- Worked Temperature -10 ~ 45℃
- Worked Humidity 10 ~ 95%RH

Metering Module

- Input Port 6, 9
- Output Port 6, 9
- Port Type Wiring Terminal
- Worked Temperature -20~50℃
- Worked Humidity 10~95%RH



Power Module

- Input Port 1
- Output Port 1 to 3
- Working Volt AC 110-220V±10%
- Output Volt DC 5V or AC 110-220V±10%
- Output Power 5W*n
- Dielectric Strength 1500V/AC 1min
- Worked Temperature -20~50℃
- Worked Humidity 10~95%RH

Order Information

HDCS® P/N	Description
Voice Module	
RHC-1A	2/8 RJ45 voice module（SW）
RHC-6	2/8 RJ45 voice module (2+6)
RHC-102	1/7 RJ45 voice module
Data Module	
RHC-39	5ports RJ45 broad band router module (100M)
RHC-33	5ports RJ45 data switch module (100M)
RHC-51	8ports RJ45 data switch module (100M)
RHC-38	1/3 RJ45 data module (STP&CAT.5)
RHC-48	1/4 RJ45 data module (STP&CAT.5)
RHC-14	8ports RJ45 modular patch panel (support CAT.6 or CAT.5e)
Video Module	
RHC-32	1/6 EF video module（two way）
RHC-7	1/4 EF video module（two way）
RHC-115	2/4 EF video module (CATV & SATV)
Power Module	
RHC-96	1/1 DC21 power module
RHC-95	1/3 DC21 power module
RHC-133	1/2 AC220 two way power module（universal）
Metering Module	
RHC-3B	6pairs DG103 wiring terminal module
RHC-3C	9pairs DG103 wiring terminal module
Logo Module	
RHC-11	1U logo module
Intelligent Cabling Box	
RHC1206B1-X	RHC1206B1-X 6Ubase box 355*240*120
RHC1206B1-M	RHC1206B1-M 6U the door of box
RHC1206B1-J	RHC1206B1-J 6U mounting rack
RHC1210B1-X	RHC1210B1-X 10Ubase box386*280*120
RHC1210B1-M	RHC1210B1-M 10U the door of box
RHC1210B1-J	RHC1210B1-J 10U mounting rack
RHC1214B1-X	RHC1214B1-X 14Ubase box386*380*120
RHC1214B1-M	RHC1214B1-M 14U the door of box
RHC1214B1-J	RHC1214B1-J 14U mounting rack
FTTH Cabling Box	
RHC1207F1-X	RHC1207F1-X 7U base box 386*380*120
RHC1207F1-M	RHC1207F1-M 7U the door of box（metal finish）
RHC1207F1-J	RHC1207F1-J 7U mounting rack
RHC1207F2-X	RHC1207F2-X 7Ubase box386*380*120
RHC1207F2-M	RHC1207F2-M 7U the door of box（plastic-spraying）
RHC1207F2-J	RHC1207F2-J 7U mounting rack

20 Installation Tool & Accessory

Application

- Terminating *HDCS*® keystone jacks with Palm Puck helps to realize safe and quick operation.
- 110 Type Insertion Tool is applicable to all *HDCS*® CAT.3, CAT.5e, CAT.6, CAT.6a keystone jacks and 110 block modules.
- IDC 4&5-Pair Punch Tool is used for terminating 4-pair 110 block modules or 5-pair 110 block modules.
- *HDCS*® Rotary Cable Stripper provides perfect stripping performance on *HDCS*® CAT.5, CAT.5e, CAT.6 and CAT.6a UTP as well as FTP/SFTP copper LAN cables

Feature & Benefit

- *HDCS*® 110-type Insertion Tool is according to the standard of the flesh engineering, and easily installed and locked up the knife-blade. The blade is able to be placed inside handle-shell of the tool, and keeps from being damaged or abrased
- *HDCS*® Palm Puck provides best protection for installer against accidental injury
- The stripping size, blaze can be pre-setup, also, adjustable according to cable size

Ordering Information

HDCS® P/N	Description
CP92-300-00	*HDCS*® palm puck
CP72-100-01	*HDCS*® 110-type Insertion tool
CP72-200-01	*HDCS*® Insertion tool (krone type)
CP72-100-03	*HDCS*® IDC 4&5-pair punch tool
CP71-100-00	*HDCS*® Rotary copper cable stripper
CP74-100-00	*HDCS*® RJ45/RJ11 connetor crimping tool

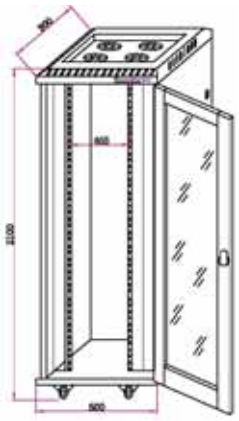
21 Standard Network Cabinet

Rosenberger *HDCS*® standard network cabinet features high quality, high precision and 19" mounting. Based on modular rack and structured design, this cabinet provides ideal accommodation for electronic equipments.

Free-standing Standard Cabinet

Feature & Benefit

- Mounting Height: 22U~47U
- Width: 600mm, 800mm
- Depth: 600mm, 800mm
- Both glass door and metal door are available for selection
- Cable entries available in the top or bottom
- Lockable front and rear doors
- Detachable side walls
- Delivered as an assembly or as a kit (set of parts)



Accessory

- Fixed support plate (quantity as per order)
- Sliding support plate (quantity as per order)
- Power distribution outlet
- Heavy duty castor and adjustable foot
- 19" transform kit
- Cable support plate
- Grounding facility
- 4 venting fans

Fixed Support Plate

Fixed Vertical Pillar

Caster and adjustable foot

Lockable Side Wall (optional)

Ordering Information

P/N	H(U) (600W × 600D)
99E008	47U
99E035	44U
99E009	42U
99E010	37U
99E011	32U
99E012	27U
99E013	22U
99E031	18U
99E032	12U
99E033	9U
99E034	57U
99E039	15U

P/N	H(U) (600W × 800D)
99E014	47U
99E036	44U
99E002	42U
99E015	37U
99E016	32U
99E017	27U
99E018	22U

P/N	H(U) (800W × 600D)
99E019	47U
99E037	44U
99E005	42U
99E020	37U
99E023	22U

P/N	H(U) (800W × 1200D)
99E026	42U

P/N	H(U) (800W × 800D)
99E006	47U
99E038	44U
99E021	42U
99E022	37U
99E024	22U
99E025	17U

Wall-Mount Standard Cabinet

Feature & Benefit

- Mounting Height: 9U~22U
- Width: 600mm
- Depth: 400mm
- Both glass door and metal door are available for selection
- Cable entries available in the top or bottom
- Fully assembled and accessories enclosed for delivery

Ordering Information

P/N	H(U) (600W × 400D)
99E040	9U
99E041	12U
99E027	15U
99E042	18U
99E043	22U

Note: Customized size is acceptable.

22 FlexField® Solution

FlexField® Concept / Feature

FlexField® is the most flexible and modular connection system. It handles coaxial, pair and fiber optic cables. It meets telecom standard G.703 and Supports applications of Ethernet with transmission speed up to 1000Mbps. The FlexField® is based on modules and applicable for both small and large application.

Variety of Cable and Connector

The FlexField® consists of a number of various modules that can handle a variety of cables and connectors.

Mix of Module

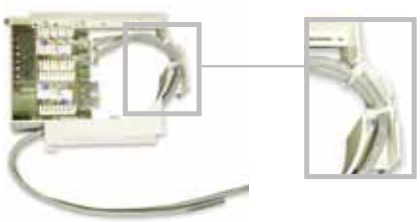
The FlexField® is modular and incremental in its design. Different types of modules- for different connectors/cables can be in the same subrack. Start with the number of modules you need for the moment, just partly fill the subrack. Add modules as the need grows.

Access to All Connector

Due to the patented cable management there is always easy front access to all connections. The cable management creates a built in cable slack that allows the module to be extracted a minimum of 30 cm from it's original position, even at full installation.

Safe Maintenance / Quick Access

No stress on the connectors when moving the modules, the cables are mechanically fixed to the modules.



19"and ETSI Rack / Cabinet

The subracks have adjustable mounting ears to fit both 19" and ETSI racks / cabinets.

Well Protected Patch Cord

Patch cords are strictly managed and well protected. The patch cords from each module enter through their own slot into the cable shelf. The cable shelf has a foldable front allowing for quick access.

FlexField® Modules

DDF G.703 Pair Cable & Coax + Balun

Feature & Benefit

Transmission Requirement-SWR

All signals pass through multi-layer impedance controlled PCBs and connectors with matched impedance. This gives good signal integrity and the transmission requirements in G.703 are met. The SWR budget of your link will not be ruined by flex modules.

EMC

All PCBs have signals at the inner layer and shielding at the outer layers. This result in low emission and high immunity. The possibility for you to have your system to fulfill EMC-Standards like directives 89/336/EEC, 92/231/EEC will not be affected.

Surge Pulse

In some telecom applications there is a 500V surge pulse requirement. They are tested according to IEC 61000-4-5.

Ordering Information

Module Type	Front	Inside	Channel	Capacity	Part Number
RJ-IDC	RJ45	IDC	E1/T1/J1	8 system	993040001-01
RJ-RJ	RJ45	RJ45	E1/T1/J1	8 system	993040002-01
IDC-IDC	IDC	IDC	E1/T1/J1	8 system	993040003-01
RJ-RJ Monitor	RJ45	RJ45	E1/T1/J1	4 system with	993040004-01
RJ-IDC Monitor	RJ45	IDC, 8 pair	E1/T1/J1	4 system with	993040005-01
1.6/5.6-1.6/5.6	1.6/5.6	1.6/5.6	E1/T1/J1/E3/T3/J3/STM-1/Video	4 system	993040006-01
1.6/5.6-1.6/5.6	1.6/5.6	1.6/5.6	E1/T1/J1/STM-1/Video	2 system with	993040007-01
M4-M4	M4	M4	E1/T1/J1/E3/T3/J3/STM-1	4 system	993040008-01
M4-M4 Monitor	M4	M4	E1/T1/J1/STM-1	2 system with	993040009-01
BNC-BNC	BNC	BNC	E1/T1/J1/E3/T3/J3/STM-1/Video	4 system	993040010-01
BNC-BNC Monitor	BNC	BNC	E1/T1/J1/E3/T3/J3/STM-1/Video	3 system with	993040011-01
SMB-SMB	SMB	SMB	E1/T1/J1/E3/T3/J3	4 system	993040012-01
SMB-SMB Monitor	SMB	SMB	E1/T1/J1/E3/T3/J3	2 system with	993040013-01
1.6/5.6-IDC Balun	1.6/5.6	IDC, 8 pair	E1/T1/J1	4 system or 8 half	993040014-01
M4-IDC Balun	M4	IDC, 8 pair	E1/T1/J1	4 system or 8 half	993040015-01
BNC-IDC Balun	BNC	IDC, 8 pair	E1/T1/J1	4 system or 8 half	993040016-01
RJ-M4 Balun	RJ45	M4	E1/T1/J1	4 system	993040017-01
RJ-BNC	RJ45	BNC	E1/T1/J1	4 system	993040018-01
RJ-1.6/5.6 Balun	RJ45	1.6/5.6	E1/T1/J1	4 system	993040019-01
Monitor Cable	RJ45	BNC	For BRS3.040.004,BRS3.040.005	-	993695001
1.6/5.6-1.6/5.6 Monitor	1.6/5.6	1.6/5.6	E1/T1/J1/E3/T3/J3/STM-1	4 system with	993040020-01
M4-M4 Monitor	M4	M4	E1/T1/J1/E3/T3/J3/STM-1	4 system with	993040021-01
M4-IDC Balun Monitor	M4	IDC	E1/T1/J1	4 system	993040025-01
1.6/5.6-IDC Balun Monitor	1.6/5.6	IDC	E1/T1/J1	4 system	993040026-01
BNC-RJ	BNC	RJ45	E1/T1/J1	4 system	993040032-01

FlexField® Solution

Ethernet Cabling System

Feature & Benefit

The Patch Panel

High density: up to 800 systems in a standard rack.
Service friendly: the patch cords are strictly organized and all connections will be accessible. So cross connection work can be performed. Choose between modules for CAT.5e or CAT.6, STP or UTP.

The Work Area Outlet

8 RJ45 outlets for 1-4 work places. Optional modules including CAT.5e, CAT.6, STP or UTP.

EMC

ALL PCBs have signals at the inner and shielding at the outer layers. The cable shields are terminated at low impedance, which results in low emission and high immunity. The possibility for you to have your system to fulfill EMC-Standards like directives 89/336/EEC, 92/231/EEC will not be affected.

DC-Current in Cable Shield

In an STP cabling there is always a risk for unwanted DC-current in the Shield due to varying ground potentials in the building. It causes a current to flow in the cable shields and it may give lower capacity in your network To avoid it there is a module with built in DC-barrier.(BRS3.041.002)

Ordering Information

Module Type	Front	Inside	Channel	Capacity	Part Number
RJ-IDC Ethernet UTP CAT.5e	RJ45	IDC	Ethernet 10/100 UTP	8 system	993041001-01
RJ-IDC Ethernet STP CAT.6 with DC-Barrier	RJ45	IDC	Ethernet 10/100/100+STP	4 system	993041002-01
RJ-RJ Ethernet STP/UTP CAT.5e	RJ45	RJ45	Ethernet 10/100STP/UTP	8 system	993040002-01
RJ-IDC Ethernet UTP CAT.3	RJ45	IDC	Ethernet CAT.3 UTP	10 system	993041003-01
RJ-IDC Ethernet UTP CAT.6	RJ45	IDC	Ethernet 10/100/100+UTP	6 system	993041004-01
RJ-IDC Ethernet STP CAT.6	RJ45	IDC	Ethernet 10/100/100+STP	6 system	993041005-01

ODF & Trunk Networks + FTTX

Feature & Benefit

Variety of Application

The modules handle 12 fibers each. They go into various size subracks. Thus, a wall mounted 12 fiber outlet can be built and also an ODF handles many hundreds of fibers. An ODF for the trunk network can be built. An ODF for fiber to the X, can also be built. All have in common: service friendly, always access to all connectors and splices.

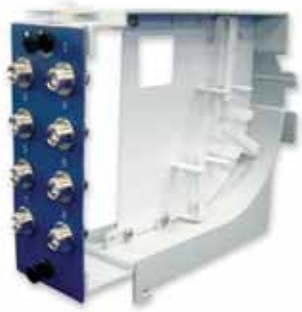
Variety of Cable

Patch cords and breakout cables are terminated directly in the module. Installation cables-cables with unprotected fibers have to be installed in a cable splitter before entering the module. In the cable splitter the cable is mechanically fixed and the length of 2m of each fiber is put in a protective fiexible tube (12 fibers pertube).

Flexibility of Cable

This tube enters the module. Slicing and fan-out of ribbon is done in the module. The excess length of the tube is stocked in a special storage compartment within the subrack. By using this excess of the tube each module can be extracted 1.5 m from the subrack, thus allowing for splicing work conveniently done at worktable.

Blown fiber can also be handled. The microducts are terminated to an adaptor. This adaptor fits into existing holes in the subrack. The flexible tubes are inserted in the free end of the adaptors.The fiber is blown in. The white tubes with fibers are handled in the modules as described above.



Ordering Information

Module Type	Description	Channel Capacity	Part Number
Breakout SC-SC	2-12 Fibers Single mode breakout cable	(0~6)×2 SC	993042001G-01
Splicing SC-SC	For splicing, fan out and pretermination of 12 fibers Single mode adaptors	(0~6)×2 SC	993043002-01
Splicing SC-SC	For splicing of ribbon fiber or single fiber	(0~6)×2 SC	993043001G-01
FC-FC	For cables without splices and having low bending radius being able to be brought directly into the module: break out cable; patch cord cable	FC/PC adaptors of SM quality, 8×1	993042002-01

FlexField® Subrack

The FlexField® modules can be installed subtracts. Subracks are available in different sizes. Different types of modules can be in the same subrack.

Start with the number of modules you need for the moment, just partly fill the subrack. Add further modules whenever the need arises.

Subrack 200

Wall Mount Box

Subrack 45

Ordering Information

Types	Module Density	Width	Depth	Height	Part Number
Subrack 200	10	19" / ETSI	270mm	200mm / 5U	994106001-01
Subrack 45	2	19"	270mm	45mm / 1U	994106002-01
Wall Mount Box	1	130mm	190mm	45mm	994106003-01

FlexField® Accesory

The FlexField® accessories are used to storage, manage and protect the cables.

Storage Shelf

Storage Bobbin

Joint 48

Ordering Information

Module Type	Description	Capacity	Part Number
Storage Shelf	Storage of excess patch cord Occupies the space of two modules in the subrack	Width:80mm 5m each of 12 single patch cord or 6 double can be stored	993044003-01
Storage Bobbin	Storage of excess patch cord Occupies the space of one module in the subrack	5m each of 12 single patch cord or 6 double can be stored	993044002-01
Joint 48	For joining a cable	maximum 48 fibres to maximum 4 Modules 993043001G-01 or 99304002-01	993044003

HDCS® Glossary

1000BASE-T	A recent LAN standard for implementing 1000 Mbps Ethernet on CAT.5 and Cat5e cables.	Coating	A material put on a fiber during the drawing process to protect it from the environment and handling.
100BASE-T	The twisted pair version of 100 Mbps Ethernet.	Coax	Short for coaxial. Single-conductor cables with braided shields. Used in the 80's for data transmission. Now generally replaced with UTP for data. Still used for video.
10BASE2	Also called Thinnet.10 Mbps Ethernet on thin (RG58) coaxial cable.	Conduit	Pipe or tubing through which cables can be pulled of housed.
10BASE5	Also called Thicknet.10 Mbps Ethernet on thick coaxial cable.	Connector	A mechanical device used to align and join two fibers together to provide a means for attaching to and decoupling from a transmitter, receiver of another fiber.
10BASE-T	10 Mbps Ethernet on twisted-pair (CAT.3) cable.	SFF	Small Form Factor using for optical fiber solution.
110 Connector	A popular insulation displacement connector (IDC) used modular jacks, patch panels and cross connects.	Consolidation point	An interconnect device that allows the horizontal cable to be split into two parts. Used for zone cabling.
66 Block	A legacy cross-connected system.	Core	The central region of an optical fiber through which light is transmitted.
Adapter	A mechanical media termination device designed to align and join fiber optic connectors.	Coupling	See Adapter.
APC	Angled Polish Connector.	Data rate	The speed, measured in bits per second, that a particular network (or other application) transmits data.
Aramid Yarn	Strength elements that provide tensile strength and provide support and additional protection for the fiber bundles.	dB	Abbreviation for decibel. The logarithmic ratio of two powers, voltages or currents.
ATM	Asynchronous Transfer Mode.	Delay skew	The difference in propagation delay between the slowest and fastest pairs in a cable or system.
Attenuation	The amount of signal lost as it travels through the cabling system. Both for copper and Optical fiber system.	Dispersion	The cause of bandwidth limitations in a fiber. Dispersion causes a broadening of input pulses along the length of the fiber. Three major types are: 1.modal dispersion. 2.chromatic dispersion. 3.waveguide dispersion.
Backboard	Refers to a plywood panel mounted on the wall of a telecom closet. Used to mount the cross connect.	ELFEXT	Equal Level Far End Crosstalk. A measure of FEXT, which accounts for the attenuation of the cabling system.
Backbone cabling	Cabling between floors in a building or between buildings in a campus.	EMI	Electromagnetic Interference.
Bandwidth	Measure of the information-carrying capacity of a copper or optical fiber cable.	Enhanced CAT.5	Also called CAT.5e.A performance classifi cation for twisted pair cables, connectors and systems. Specified to 100 MHz.
Balun	A transformer used to attach coaxial or twinaxial equipment to twisted pair cabling.	ESCON	Enterprise Systems Connection.
Bend Radius	The minimum recommended bending radius during installation of after installation where cable damage will not occur. Cable bend radius during installation infers that the cable is experiencing a tensile load. Free bend infers a smaller allowable bend radius since it is at a condition of minimal load.	Ethernet	The most common network protocol in use. A protocol is a set of rules enabling data communications. Based originally on a bus topology.
BER	Bit Error Rate.	F connector	A common coaxial connector used for video applications (CATV).
BNC	A bayonet style coaxial connector.	Ferrule	A mechanical fixture, generally a rigid tube, used to protect and align a fiber in a connector. Generally associated with fiber optic connectors.
Buffering	A protective material extruded directly on the fiber.	FEXT	Far End Crosstalk. Unwanted noise coupled onto a receive pair from a transmit pair at the far end of the system.
CAT.3	A performance classification for twisted pair cables, connectors and systems. Specified to 16 MHz. Suitable for voice and data applications up to 10 Mbps.	Fiber Optics	Light transmission through optical fibers for communication or signaling.
CAT.5	A performance classification for twisted pair cables, connectors and systems. Specified to 100 MHz.	Gbps	A data rate. Gigabits per second. A gigabit is one billion bits.
CAT.5e	Also called Enhanced CAT.5. A performance classifi cation for twisted pair cables, connectors and systems. Specified to 100 MHz.	Gigabit Ethernet	The newest (1999) and fastest version of Ethernet. Data rate is 1000 Mbps or 1 Gigabit per second.
CAT.6	A performance classification for twisted pair cables, connectors and systems. Specified up to 250 MHz. Suitable for voice and data applications up to 1000 Mbps.	Gigahertz	A unit of frequency that is equal to one billion cycles per second, GHz.
Channel	The entire horizontal cabling system. Everything between the computer and the LAN hub in the telecom closet, excluding the equipment connections.	Horizontal cabling	That portion of the telecommunications cabling that provides connectivity between the horizontal cross-connect and workarea telecommunications outlet.
Cladding	The material surrounding the core of an optical waveguide. The cladding must have a lower index of refraction to keep the light in core.	Hub	Network device, usually in the telecom closet, that stations connect to.

IDC	Insulation Displacement Connector. A style of connector that slices through the cable insulation to make a connection. Eliminates the need to strip insulation.	PBX	Private Branch Exchange
IEEE	Institute of Electrical and Electronics Engineers.	PC	Physical Contact.
Impedance	The total opposition to the flow of alternating current in a conductor.	Pigtail	Optical fiber cable that has a connector installed on one end.
Index of Refraction	The ratio of light velocity in vacuum to its velocity in a given transmission medium.	Plenum	An air-handling space such as that found above drop-ceiling tiles or in raised floors. A fire code for indoor cable.
Index Matching Fluid	A fluid with an index of refraction close to that of glass that reduces Fresnel reflections caused by refractive-index differences.	Power sum	A mathematical addition of noise from multiple disturbers. Applied to NEXT and ELFEXT requirements.
Jumper	Usually short cables with connectors installed used to make a cross connection.	Propagation delay	The amount of time it takes a signal to travel through a copper cable or system.
Kbps	A data rate. Kilobits, or thousands of bits, per second.	Propagation delay skew	The difference in propagation delay between the slowest and fastest pairs in a copper cable or system.
LAN	Local Area Network.	PS ELFEXT	See power sum and ELFEXT.
Laser	Light Amplification by Stimulated Emission of Radiation.	PS NEXT	See power sum and NEXT.
LED	Light Emitting Diode.	Punch down	Refers to IDC connectors and the method used to terminate them.
Link	The part of the horizontal cabling system between the work area outlet and the telecom closet termination.	Rack	Used to mount patch panels, enclosures and equipment in the telecom closet. Usually 19" wide by 7' high.
Loose Tube cable	Type of cable design whereby coated fibers are encased in buffer tubes offering excellent fiber protection and segregation.	Receiver	An electronic package that converts optical signals to electrical signals.
LSZH	Low Smoke Zero Halogen.	Repeater	An active device used to regenerate an optical signal to allow an increase in the system length.
Mbps	A data rate. Megabits, or millions of bits, per second.	Return loss	A measure of the signal reflected back toward the transmitter as a result of impedance variations in the copper or fiber cabling system.
Mechanical Splicing	Joining two fibers together by permanent or temporary mechanical means to enable a continuous signal.	Riser	Pathways for indoors cables that pass between floors. It is normally a vertical shaft of space. A fire code rating for indoor cable.
MHz	Megahertz. Millions of cycles (Hertz) per second. A frequency or frequency range (bandwidth) through which a cabling system is specified.	RJ11	A wiring pattern for 6-position modular jacks.
Mode	A term used to describe an independent light path through a fiber, as in multimode of single mode.	RJ45	A wiring pattern for8-position modular jacks.
Modular jack	The standard female connector for twisted pair cable. A "telephone jack".	SC connector	Subscriber or Square connector.
Modular plug	The standard male connector for twisted pair cable. A "telephone plug".	Single mode	An optical waveguide in which the signal travels in one mode. The fiber has a small core diameter, typically 8.3 – 9.5um.
MT-RJ	Mechanical Transfer – Registered Jack.	Splicing	The permanent joining of barefiber ends to another fiber.
Multimode	An optical waveguide in which light travels in multiple mode. Typical core/cladding size is 50/125 um.	ST connector	Straight tip connector.
NEXT	Near End Crosstalk. The unwanted noise coupled into a device's receive circuit from its transmit circuit.	STP	Shielded Twisted Pair.
NIC	Network interface card.	STS	Synchronous Transport Signal.
Node	A device connected to a network.	Transmitter	An electronic package used to convert an electrical informationcarrying signal to a corresponding optical signal for transmission by fiber.
Numerical Aperture (NA)	The number that expresses the light-gathering ability of a fiber.	Thicknet	IEEE 10BASE5.10 Mbps Ethernet on thick coaxial cable.
OFCP	Optical Fiber Conductive Plenum.	Thinnet	IEEE 10BASE2. 10 Mbps Ethernet on thin (RG58) coaxial cable.
OFCR	Optical Fiber Conductive Riser.	Token ring	A networking protocol based on a token-passing ring.
OFNP	Optical Fiber Nonconductive Plenum.	Twisted pair cable	Cable made from pairs of wires, which have been twisted together.
OFNR	Optical Fiber Nonconductive Riser.	UL	Underwriters Laboratory.
OTDR	Optical Time Domain Reflectometer.	UTP	Unshielded twisted pair cable.
Outlet	Where the horizontal cabling terminates in the work area.	VCSEL	Vertical Cavity Surface Emitting Laser.
Patch cord	A cable assembly with (usually) a plug on each end, used to make a cross connection.	Wavelength	The distance between two successive points of an electromagnetic waveform.
Patch panel	Patch panelA collection of connector panels located in a common housing.	Zero-Dispersion Wavelength	Wavelength at which the chromatic dispersion of an optical fiber is zero. Occurs when waveguide dispersion cancels out material dispersion.

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